The
BROWNING-DRAKE
Circuits

A Vintage Radio MONOGRAPH

by

D. H. MOORE

The Editorial Group, Ltd...

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DEDICATION

..to a way of life
that should not have
been forgotten.

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BROWNING-DRAKE

Browning-Drake

The collaboration of Glenn H. Browning and Dr. F.H.Drake began in 1923, resulting one year later in the first B-D circuit offered the home-constructor through radio media.

The Christian Science Monitor's radio editor was first credited with giving the new circuit and its remarkable coils an enthusiastic publicity, and all other media immediately followed suit. During the next five years the original circuit remained practically as first conceived, and B-D kits, coils, and circuitry lasted into the Thirties when a shift was made to producing commercial ham gear.

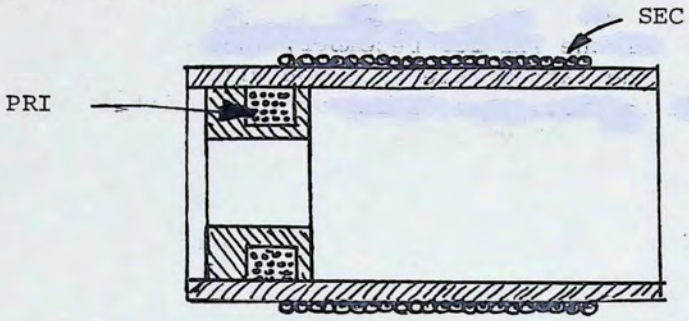
B-D's efforts were always towards the home-constructor, when simplicity, dependability and, oddly enough, appearances, did much to spread the fascination of early Radio to everyman. This is best illustrated, perhaps, by comparison of the configuration of the original B-D coils and their subsequent refinement by National, under Millen. The Single Coil Kit of 1927 would be a good example, detailed herein.

Another point in B-D's favour was the ease with which their 2- or 5-tube DC kits could be converted to the new AC tubes, a feature that proved to be a bugbear for many another manufacturer. Radio media of the period published many a Rube Goldberg configuration on how to adapt existing TRFs to AC tubes. Few were successful. It may be worth mentioning, also, that it was Browning, never Drake, who wrote for the media, and in a most lucid and grammatically correct style. However it was Drake who contributed so effectively to the Proceedings of the IRE and demonstrated the technical efficiency of the B-D coils.

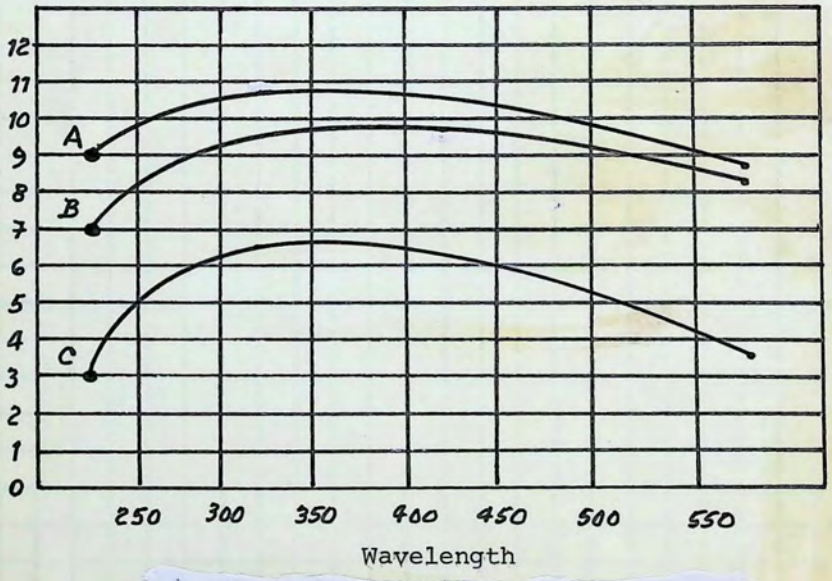
The B-D circuit began when Browning and Drake decided to investigate the mathematics of a TRF transformer (coil), in conjunction with an amplifying vacuum tube, in order to determine just how much of amplification could be expected from the combination. They discovered rather quickly that the capacity between the PRI and SEC windings, of commercially available TRF transformers (coils), was extremely detrimental to their efficiency. They also found that only by winding the PRI in a slot located at the low portion of the SEC could the calculated amplification be obtained. The construction they advocated will be found sketched over-leaf.

The following chart shows the resultant amplification curves of calculated vs. conventional TRF transformers vs. their Regenaformer configuration. The original chart was plotted by the Harvard Co-Operat-

ive Society in 1924.



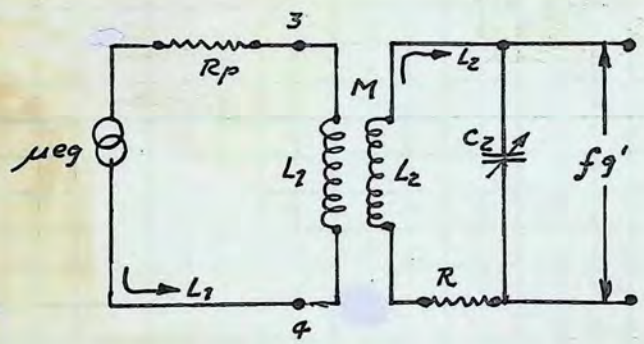
THE BROWNING-DRAKE "REGENAFORMER"



AMPLIFICATION: THEORETICL & PRACTICAL

where: A = amplification calculated.
B = "Regenaformer".
C = Ordinary TRF transformer.

Those of you who favour working through mathematical formulae, the Proceedings of the IRE for December, 1926, and February 1927 will delight you. In the latter reference you will find an article by Browning and Dr. E.L.Chaffee, also of Harvard, in which it was clearly demonstrated that a .00007 MF grid-condenser was vastly superior a value than the conventional .00025 MF then in vogue. And the complete Theory of Radio Detection , along with interesting experimental data, will also be found therein.



Equivalent circuit for determining the amplification of TRF transformers, where:

f = impressed frequency.
μ = amplification factor of tube.

In the Twenties the effort to get even coupling and constant amplification over the entire B.C. band, automatic variable coupling was employed between the PRI and SEC windings by most set and kit manufacturers. The slot-wound PRI of B-D obviated the need for this, and as would be expected, slot-wound PRI coils began to appear everywhere. Among those firms were Pilot, Silver-Marshall, King, National.

From 1923 through 1927 there were practically no alterations in the basic B-D circuit. The introduction of the 1927 Official Kit by Browing-Drake, through National, was the first radical change, in that there were new space-wound coils designed by National of only 2" diameter, an illuminated drum dial, and a single control made-up into one compact assembly, requiring very little else to make a receiver. The 1927 Kit-Sets were offered in DC and AC versions, using 2 or 5 tubes.

The 2-tube Kit-Set could be constructed for approximately an even $62 for the AC version, and around $57 for the DC version. That a small difference existed between both prices is interesting. Considering that the dollar was still on the gold standard, a B-D wasn't cheap

for the average home-constructor. Still, it was extremely popular. You get what you pay for, as the old saw has it, and the B-D circuitry and coils did offer a superior receiver.

By way of examples of prices the following listing is of the Browning-Drake parts, all other parts such as rheostats, switches, AF transformers, sockets, etc., were by reputable manufacturers:

Single Drum Control Kit	$26.00
Foundation Unit	16.50
Optional Shields	8.00
135 MMF Variable	2.50
RFC	2.00
30 MMF Variable	1.35
C.T. FIL Resistors	1.80
100-ohm Biasing Resistor	.70

As with all other circuits of the period, components, other than those specified by B-D for sockets, posts, switches, etc., could be by any good manufacturer, such as Yaxley, Benjamin, Amer-Tran,etc. The shields listed were recommended only where there was what used to be called "strong interference from locals". I have tried receptions both with and without the shields, and found little difference here.

The Browning-Drake was one of the better receivers from the glory days of Radio, and deserves your attention.

* * *
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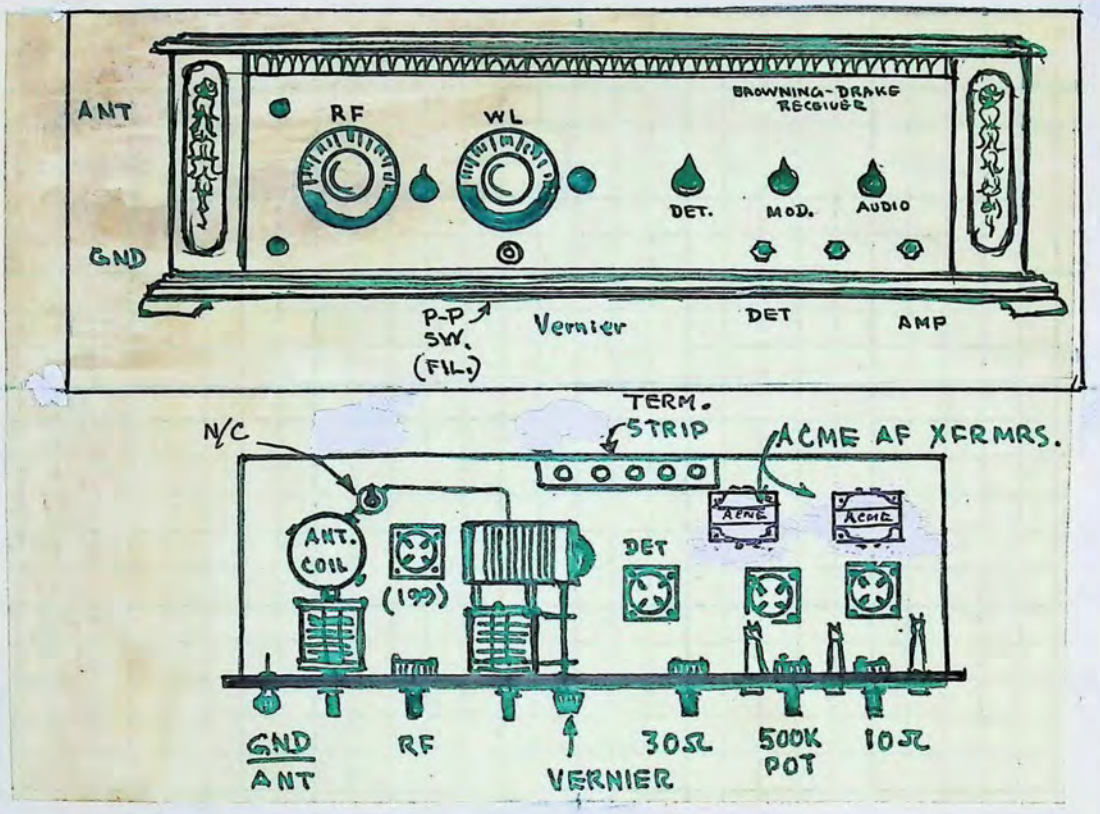
VOLNEY HURD
Radio Editor Christian Science Monitor

The man who sparked national interest in the first Browning-Drake circuits, which led to B-D being written about, not only here but overseas also, with an enthusiasm that endured for years.

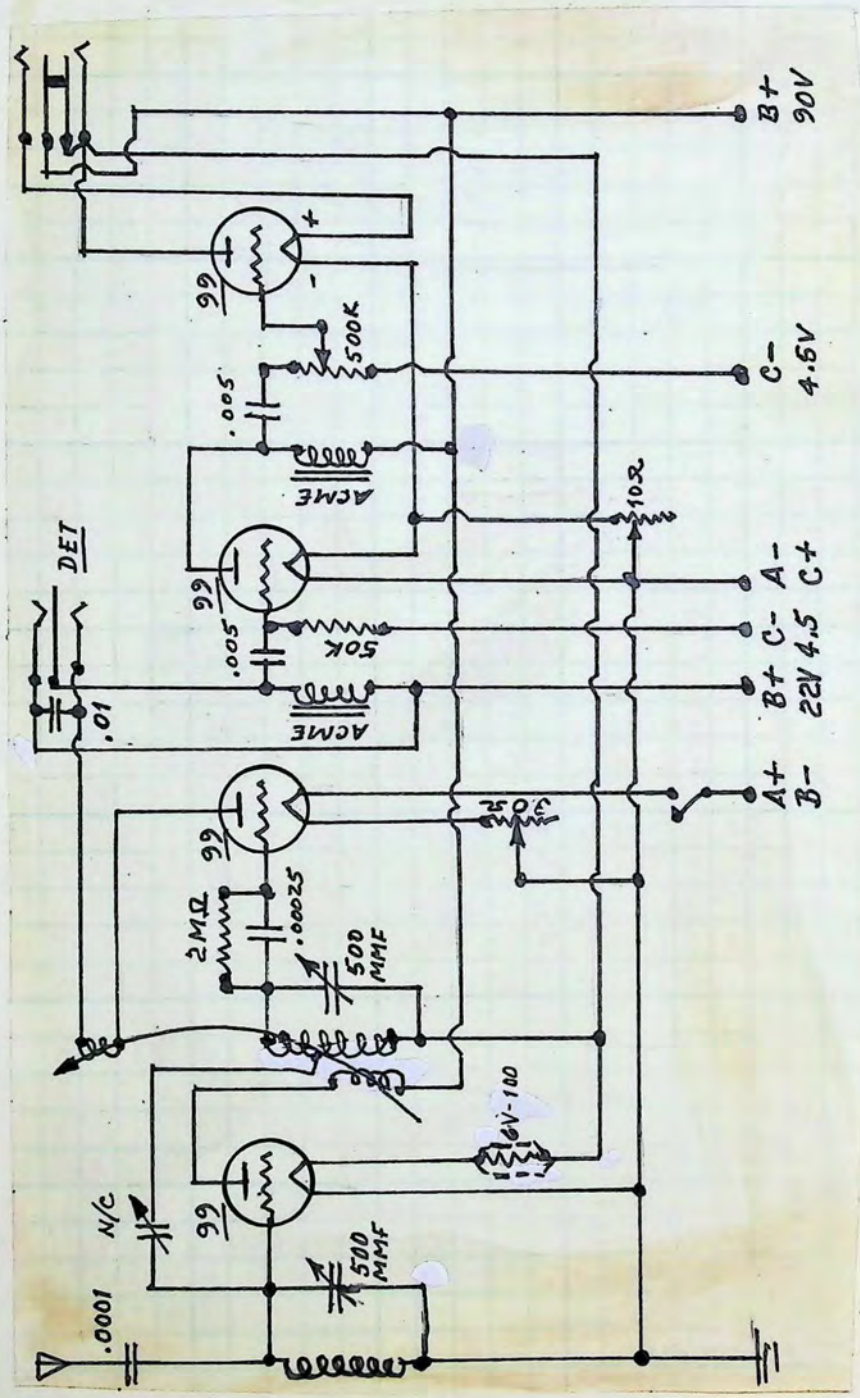
4-TUBE BROWING-DRAKE, 1924:



NOTES:

1. DET jack for RF and DET tubes only.
2. AMP control jack lights amplifier tube only.
3. Balance RF tube and use regeneration on SEC of RF xfrmr.
4. Connect A-battery to B-posts; insert tubes.
5. TUBES SHOULD NOT ILLUMINATE!
6. Remove A-battery and connect complete power supply.
7. With 99 tube in socket, tune in a strong signal, placing rotor just below oscillation.
8. Remove 6V-100 Amperite and adjust Broadcast control fully CCW; turn knob slowly until a plicking sound is heard.
9. At this point, prior signal should be minimal.
10. Replace Amperite: if set howls, turn BC knob CW.
11. Amplification will occur from 60 cycles to 10K cycles.
12. 500K pot. has C.T. connected to grid of 2nd AF tube. (This control was originally called a "Modifier".)

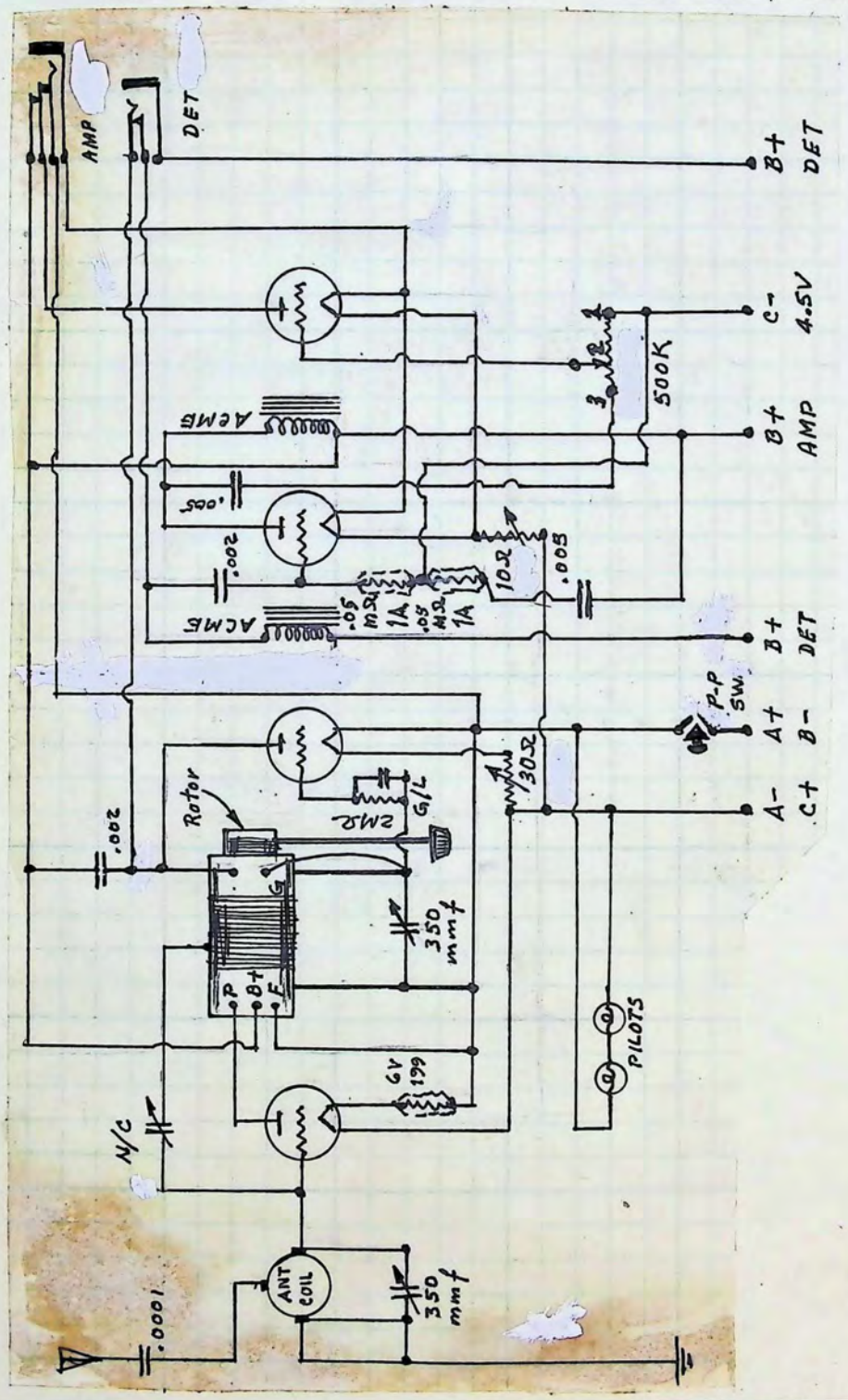
4-TUBE BROWNING-DRAKE RECEIVER, 1924; First Version



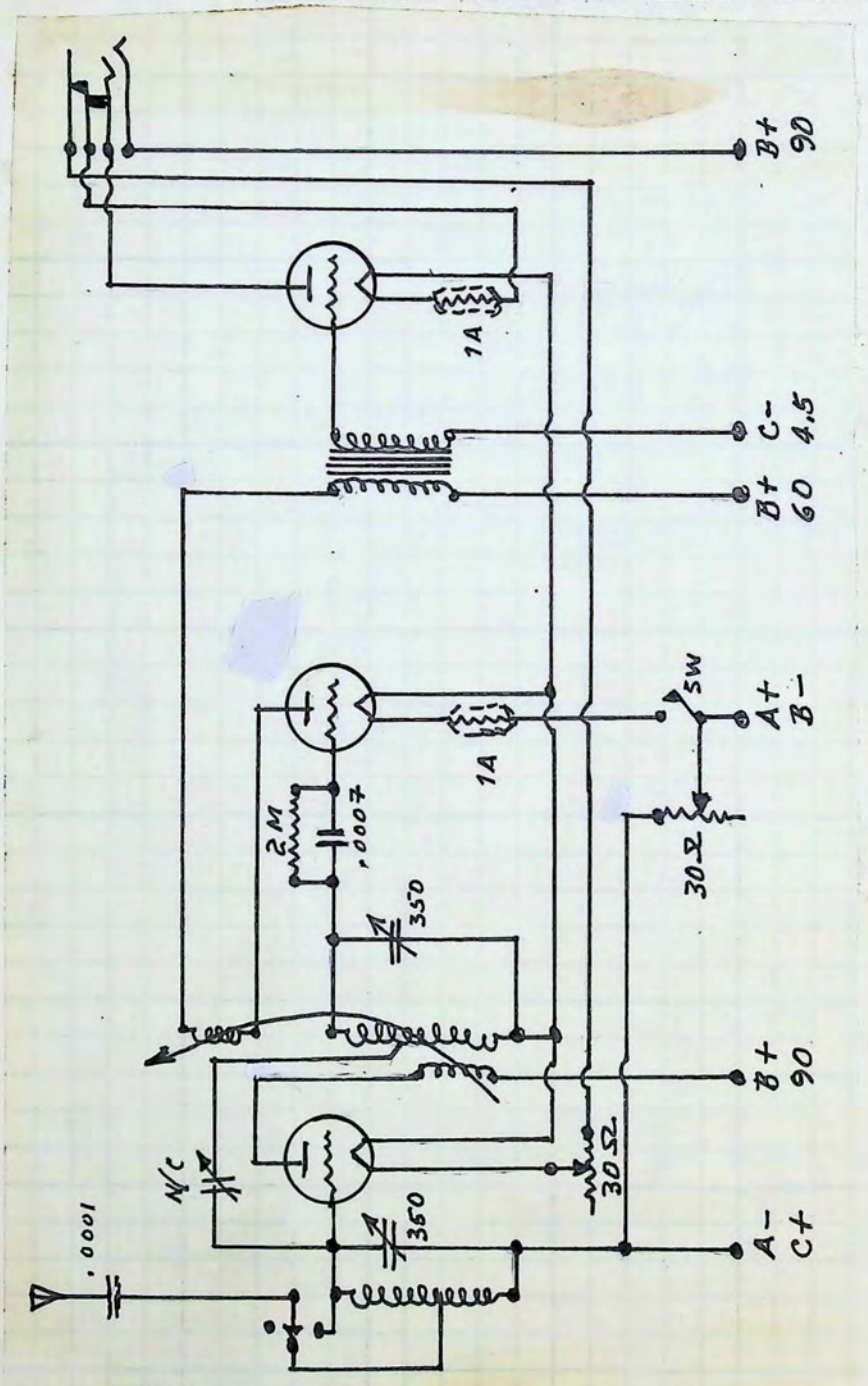
NOTE:

There were two so-called First Versions of the original B-D circuit: one employed ACME AF transformers, this version employed ACME Z-2 impedence-coupled xfrms.

4-TUBE BROWNING-DRAKE RECEIVER, 1924; Second Version



3XP's VERSION OF THE 1924 B-D RECEIVER, 1925

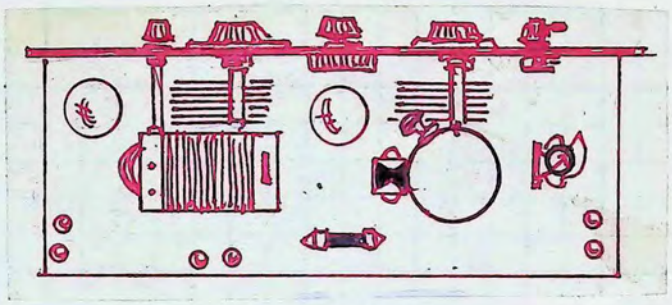


Designed for V99 or Schickling S1600 tubes.

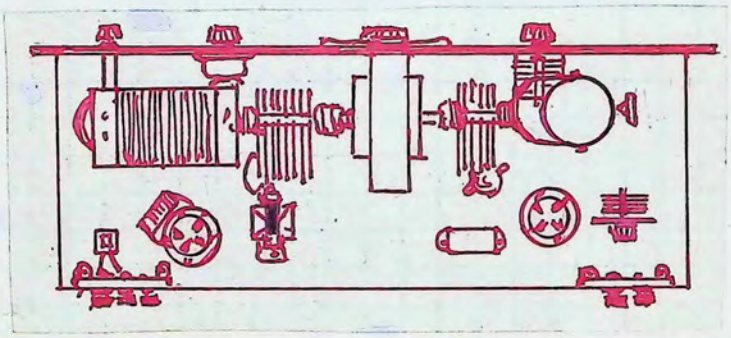
Note:

3XP was the call of the station operated by Neeley's "Radio In The Home" magazine, in Philadelphia.

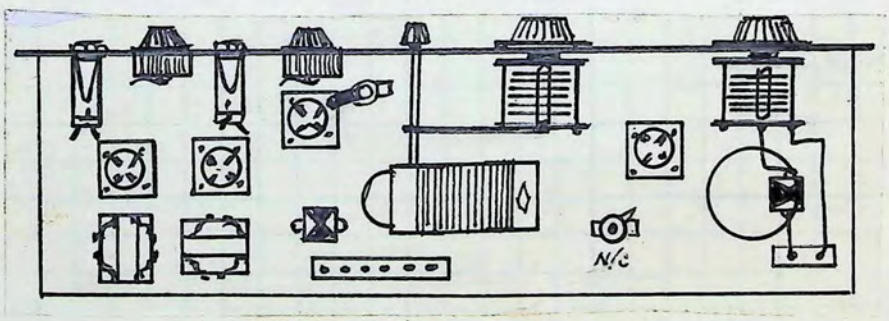
ORIGINAL BASE-BOARD LAYOUTS



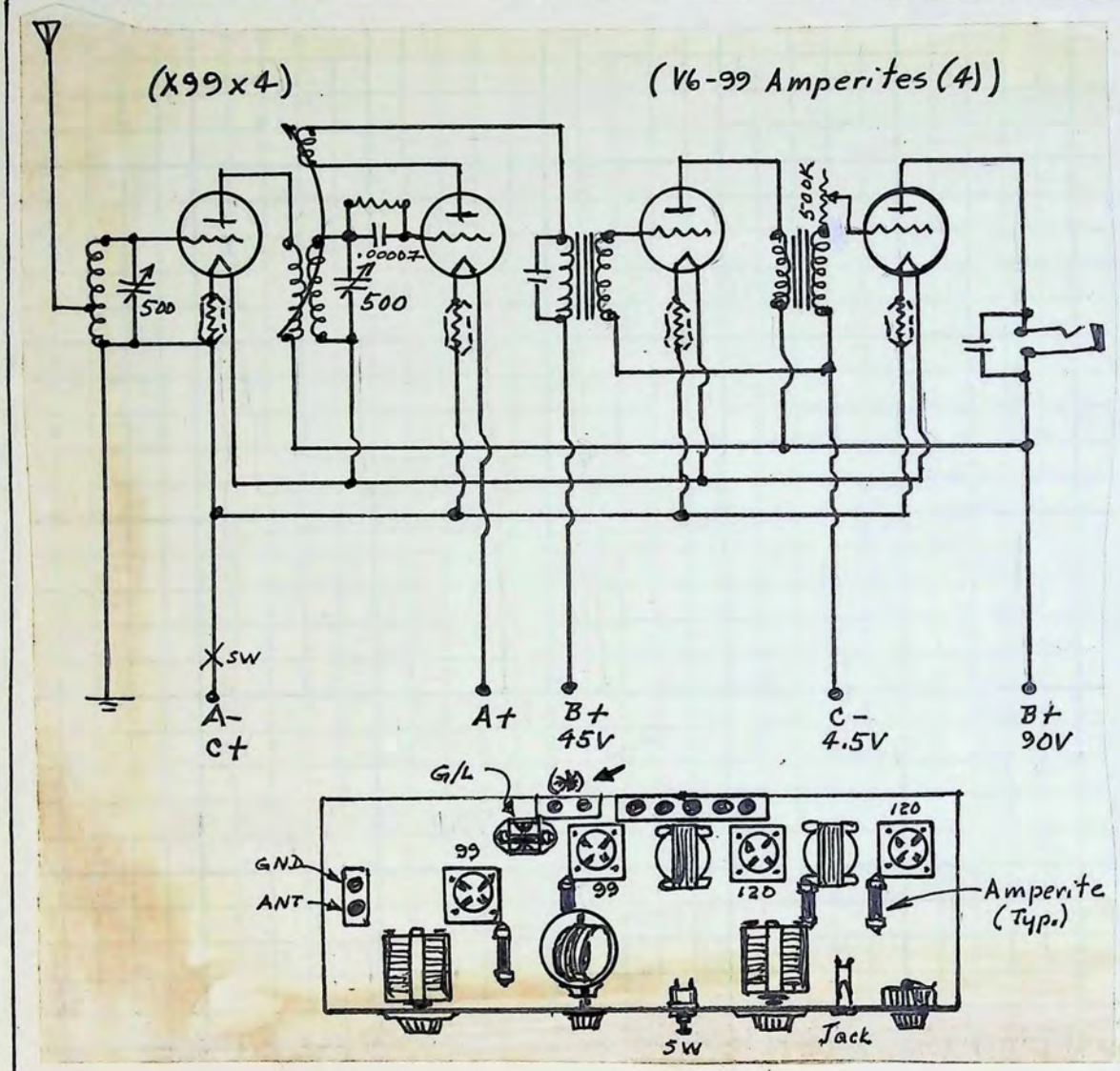
2-TUBE, 1926



2-TUBE, 1927



ORIGINAL 4-TUBE BASE-BOARD
1924



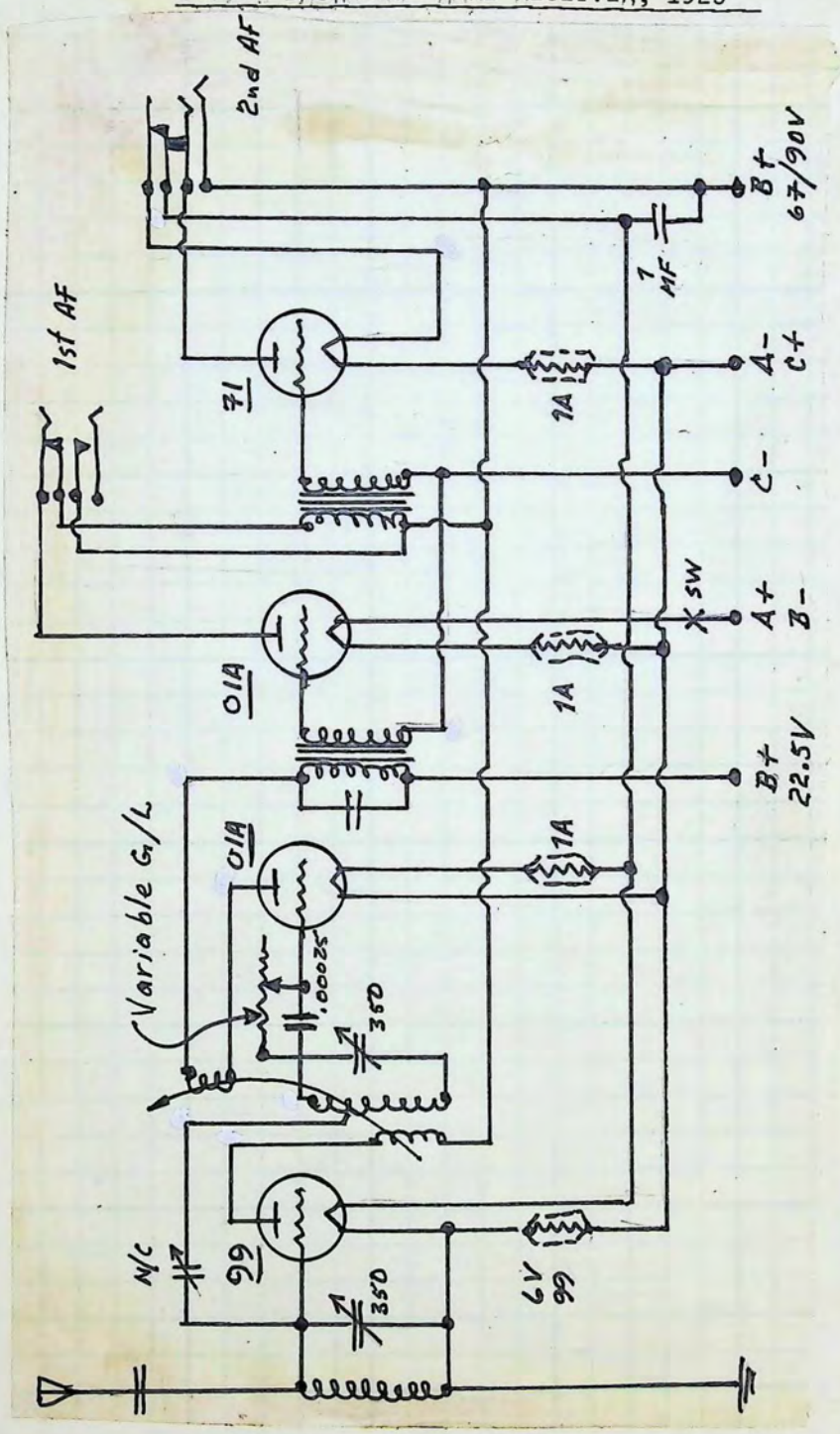
NOTES:

1. 120 tubes may be used; this will require 180 volts on the plate and a negative bias of -22.5V.
2. For constants not shown, refer to other B-D schematics.

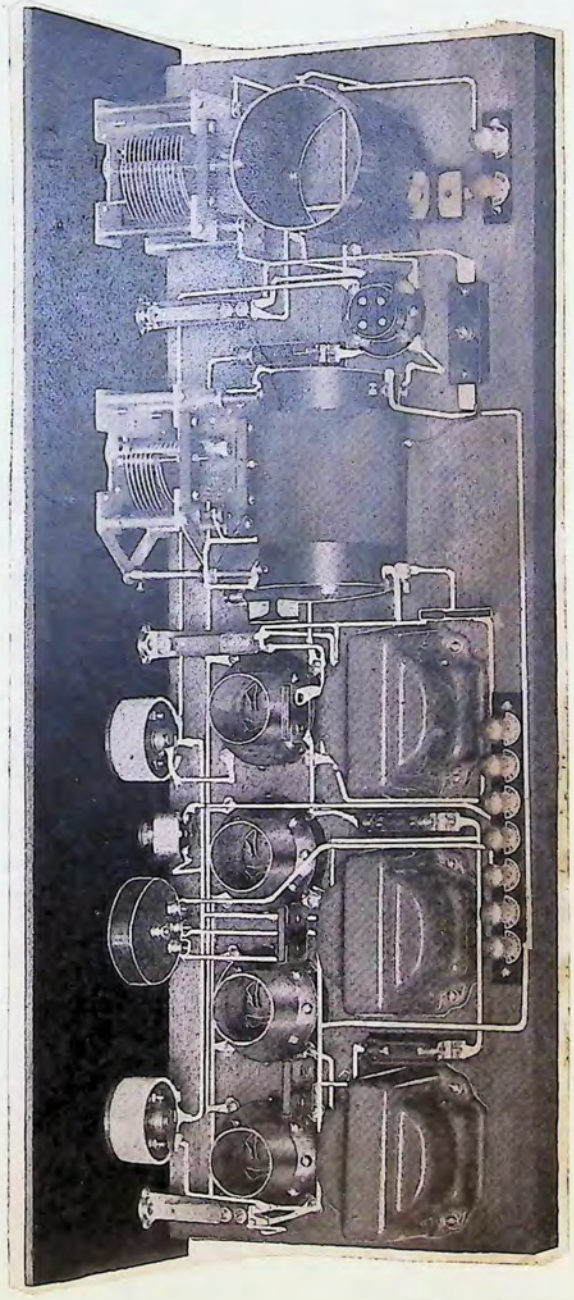
(*) = Optional placement for Speaker Jacks. Otherwise, use jack on front panel.

BROWNING-DRAKE WITHOUT NEUTRALISING, 1925

4-TUBE BROWNING-DRAKE RECEIVER, 1925

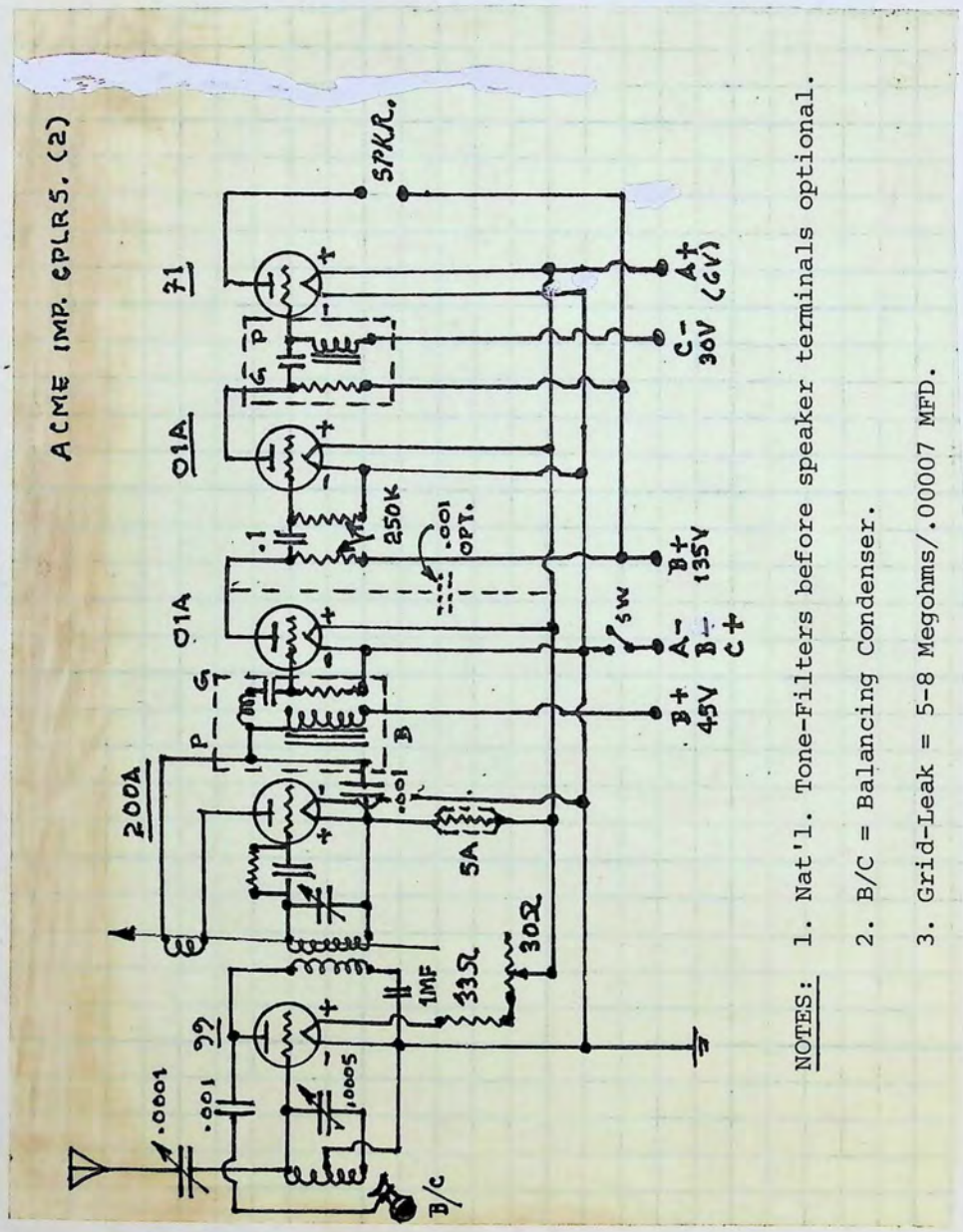


ORIGINAL BROWNING-DRAKE WITH IMPEDANCE COUPLING, 1926; Sht. 1



5-TUBE BROWNING-DRAKE, 1926:

(Sht. 2)

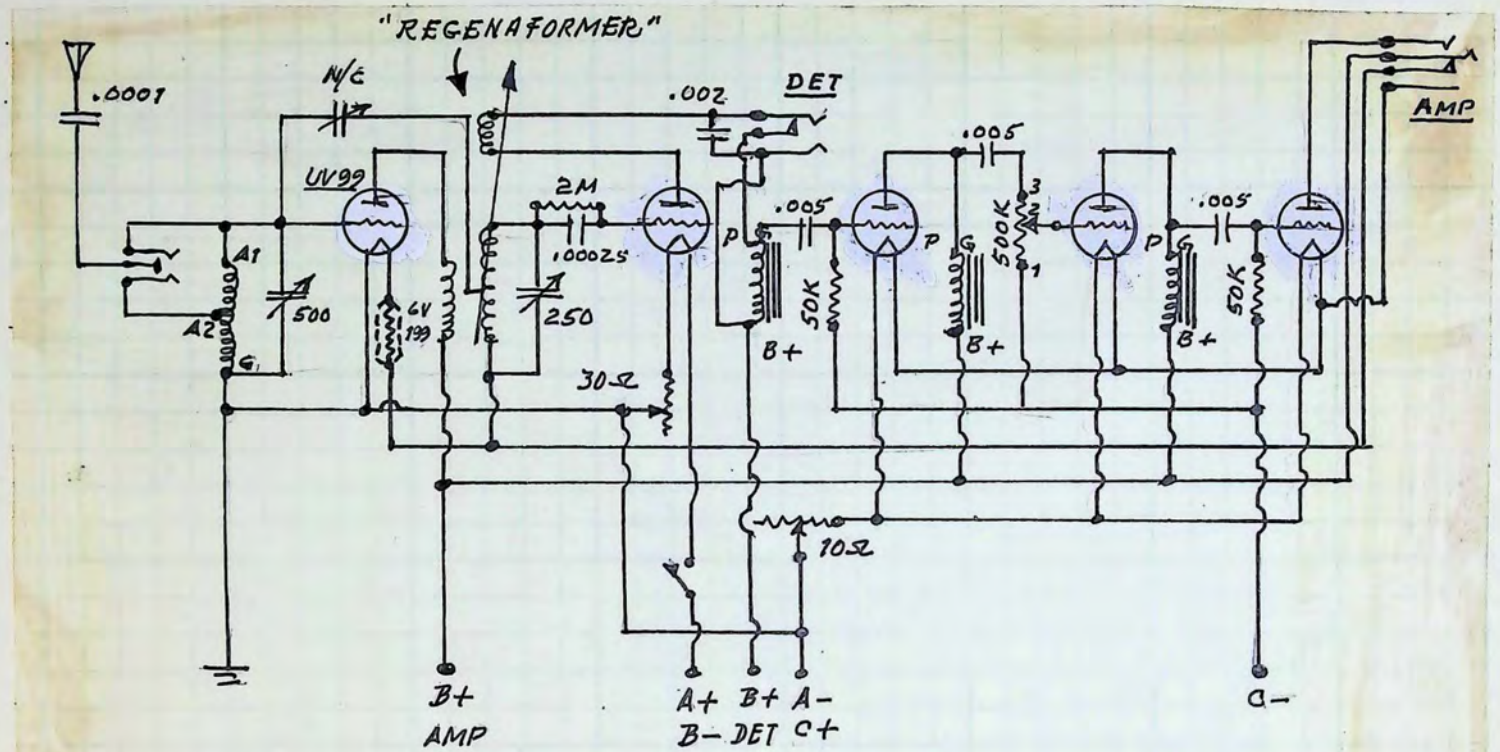


NOTES: 1. Nat'l. Tone-Filters before speaker terminals optional.

2. B/C = Balancing Condenser.

3. Grid-Leak = 5-8 Megohms/.00007 MFD.

(CB 3-27)



(3) ACME 22 IMP. UNITS.
N/C = Variodenser Model "N"

PANEL = 7" x 26"
BASEB'D. = 9" x 25" x ½"
Terminal Strip = 6" x ½" x 3/16"
ANT/GND Strip = 2½" x ½" x 3/16"

(CB Spr.-'26)

5-TUBE B-D IMPEDANCE-COUPLED AF, 1926

(Sht. 3)

PRELIMINARY CHECK-OUT PROCEDURES:

1. Insert phones in DET jack with the RF tube (V99) in its socket.

2. Tune in a strong signal, placing the tickler just below point of oscillation.

3. Remove the 6V-199 Amperite from its mounting.

4. With an insulated screw-driver, turn Variodenser screw counter-clockwise as far as it will go.

5. Then turn screw clockwise until a distinct 'plunk' is heard in the phones.

6. At this point the tuned-n signal should be at a minimum.

7. Replace the Amperite.

8. If receiver howls, turn Variodenser screw clockwise slightly until howl disappears.

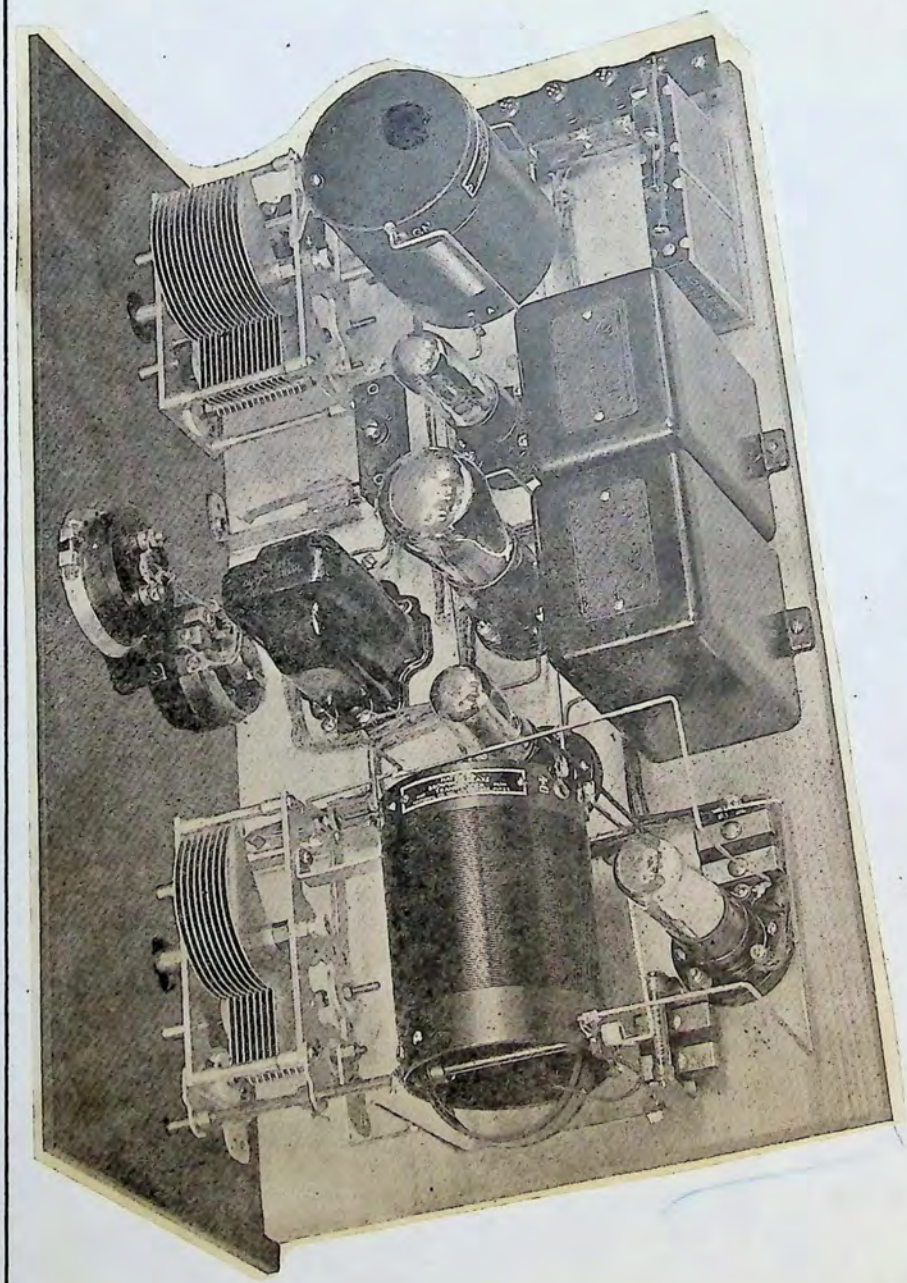
NOTE: The V99 tube used as an RF amplifier was selected by Browning because it was easier to balance and neutralise. The Amperite is inserted in the A+ leg.

9. Leave the VOL control in the best position for the wavelength you are receiving, and use the "Modifier" for varying the signal strength.The 500K pot. is the "Modifier", with the centre arm connected to the grid of the second amplifier tube (second from right on schematic). No de-tuning can occur from use of this control.

NOTE: If the "Regenaformer" kit you have includes SLF variables, the tap on the ANT coil can be eliminated. If variables are not SLF, the tap on the ANT coil is used for short or long-wave reception, depending upon the length of the aerial (ANT), which should not exceed 30 feet - otherwise the receiver will tune rather broadly.

The DET jack may be omitted, if desired. The AMP jack controls the FIL of the three AF tubes, when inserted.

BROWNING-DRAKE SOCKET POWER SET, 1926:(1)

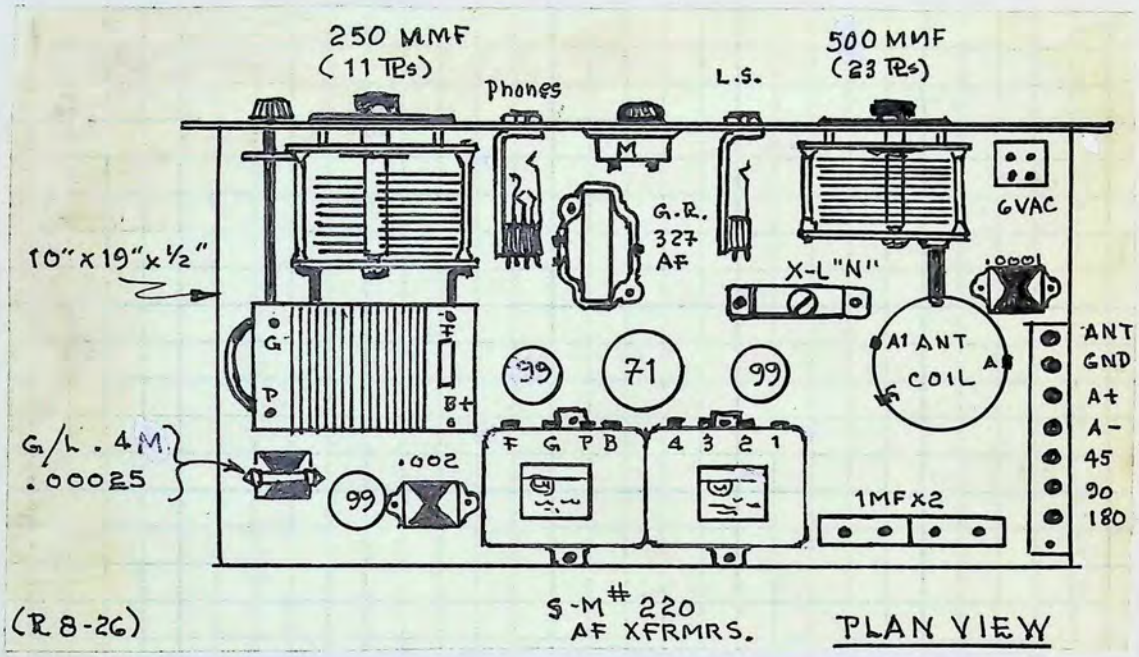


Panel = 7" x 20".
Baseboard = 10" x 19½" x ½".
G.R. 367 Output Xfrmr.
X-L Model "N" Variodenser. (N/C).
Eby Binding Post Strip (7 Posts).

Weston 506 Voltmeter.
S-M 220 AF Xfrmrs. (2).
National Tuning Dials (2).
Yaxley Jacks.
Na-Ald Sockets (4).

(Gerald M. Best; Designer)

BEST's BROWNING-DRAKE RCVR., 1926: Sht. 2



GENERAL NOTES

1. Voltmeter should be held to approximately 60 mA.

2. Seperate GND should be used for receiver and the power supply. For schematics of Browning-Drake power units, see following pages.

3. The National variable in the RF circuit has an integral neutralising condenser, and may be used in conjunction with the X-L Model "N" "Variodenser".

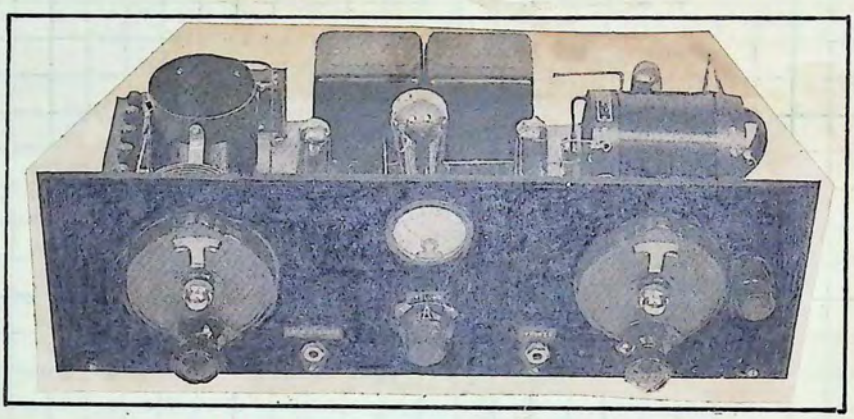
4. All 99 tubes are with UX bases.

5. Check 99 tube filaments first by connecting "A" leads and turning set ON. Voltmeter should read around 3.6 volts. Do not burn tubes higher.

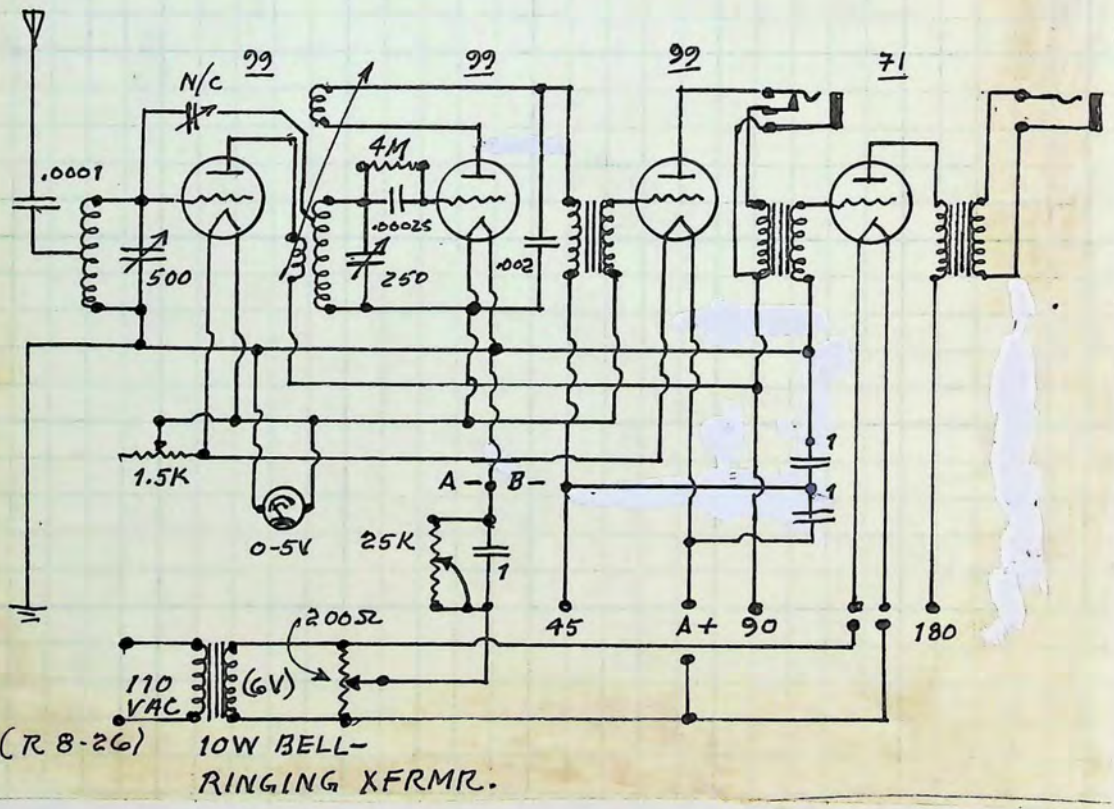
6. Insert 71 tube and apply 6 VAC. Voltmeter should now read approximately 3.3 volts. Insert a 25 mA scale meter into the 180 VDC line. Adjust the 25K resistor in power unit for plate current of 23 mA.

BROWNING-DRAKE SOCKET POWER SET: 1926

Sht. 3

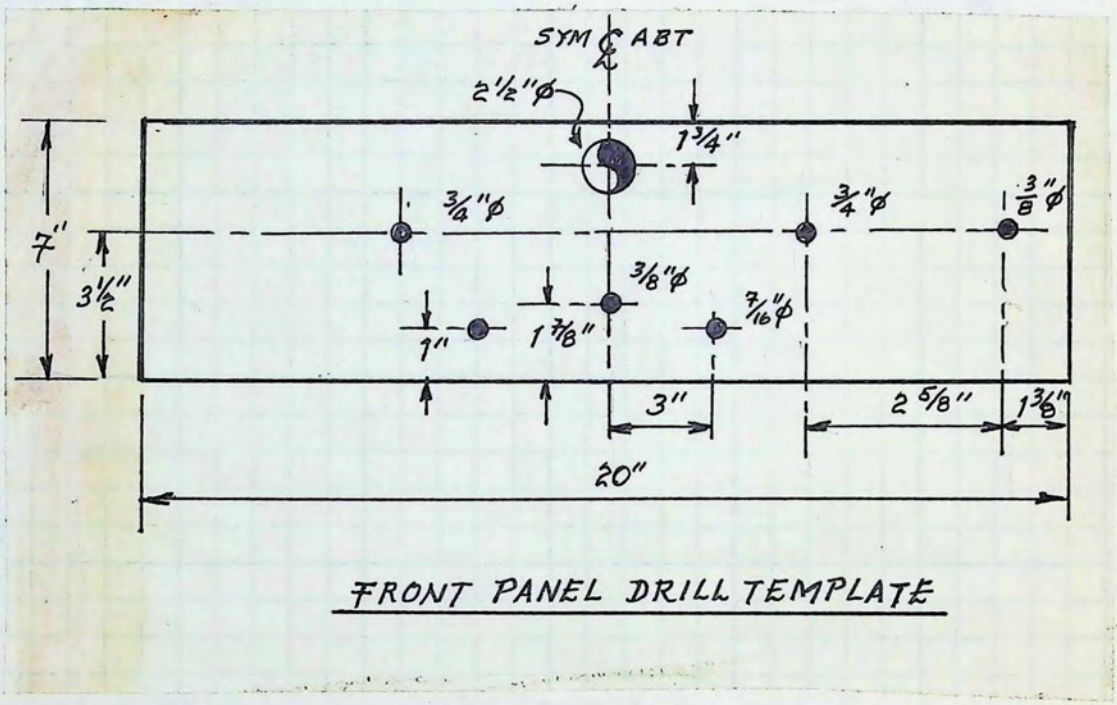


(Gerald M. Best)

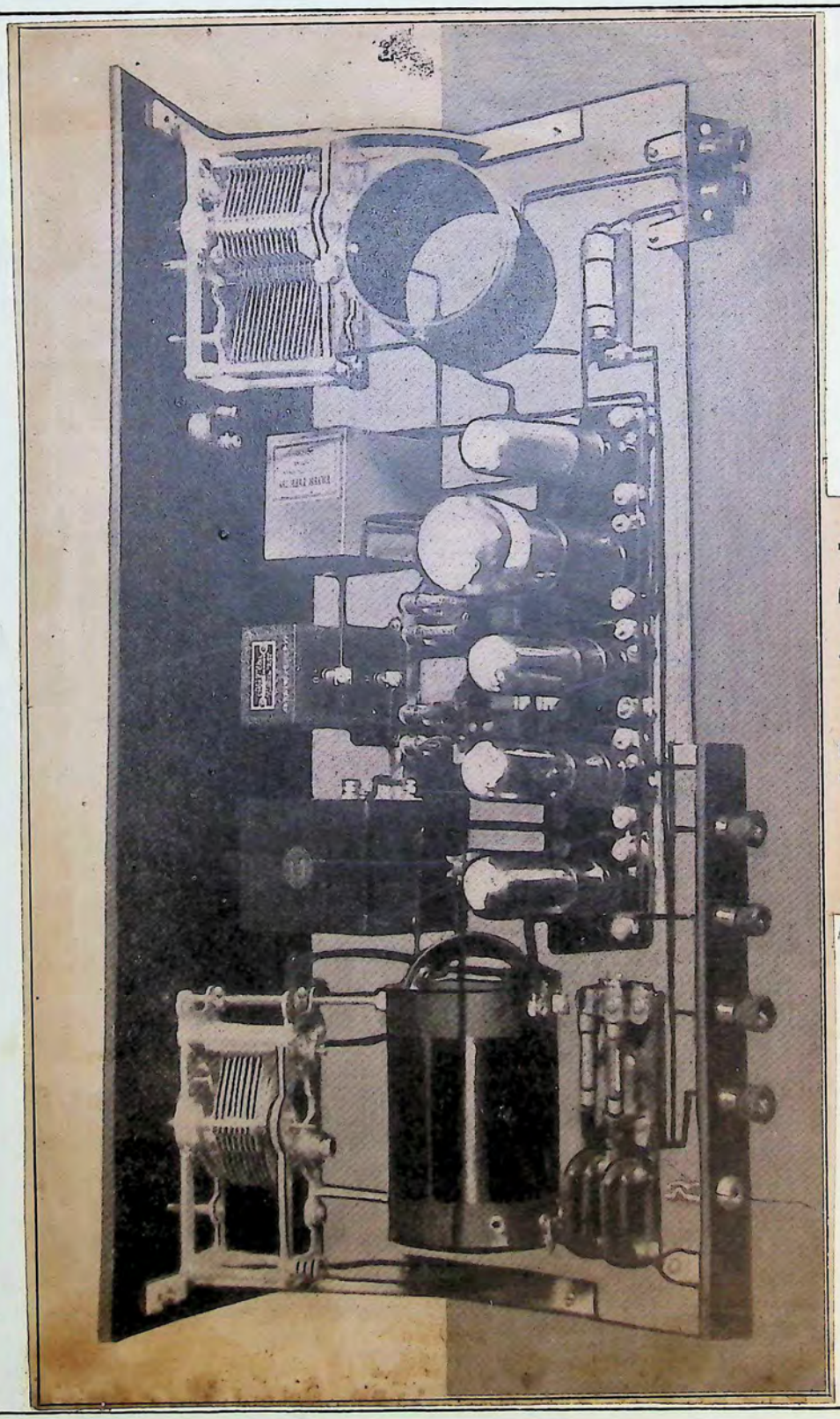


(R 8-26) 10W BELL-RINGING XFRMR.

BEST's BROWNING-DRAKE RCVR.: 1926: Sht. 4



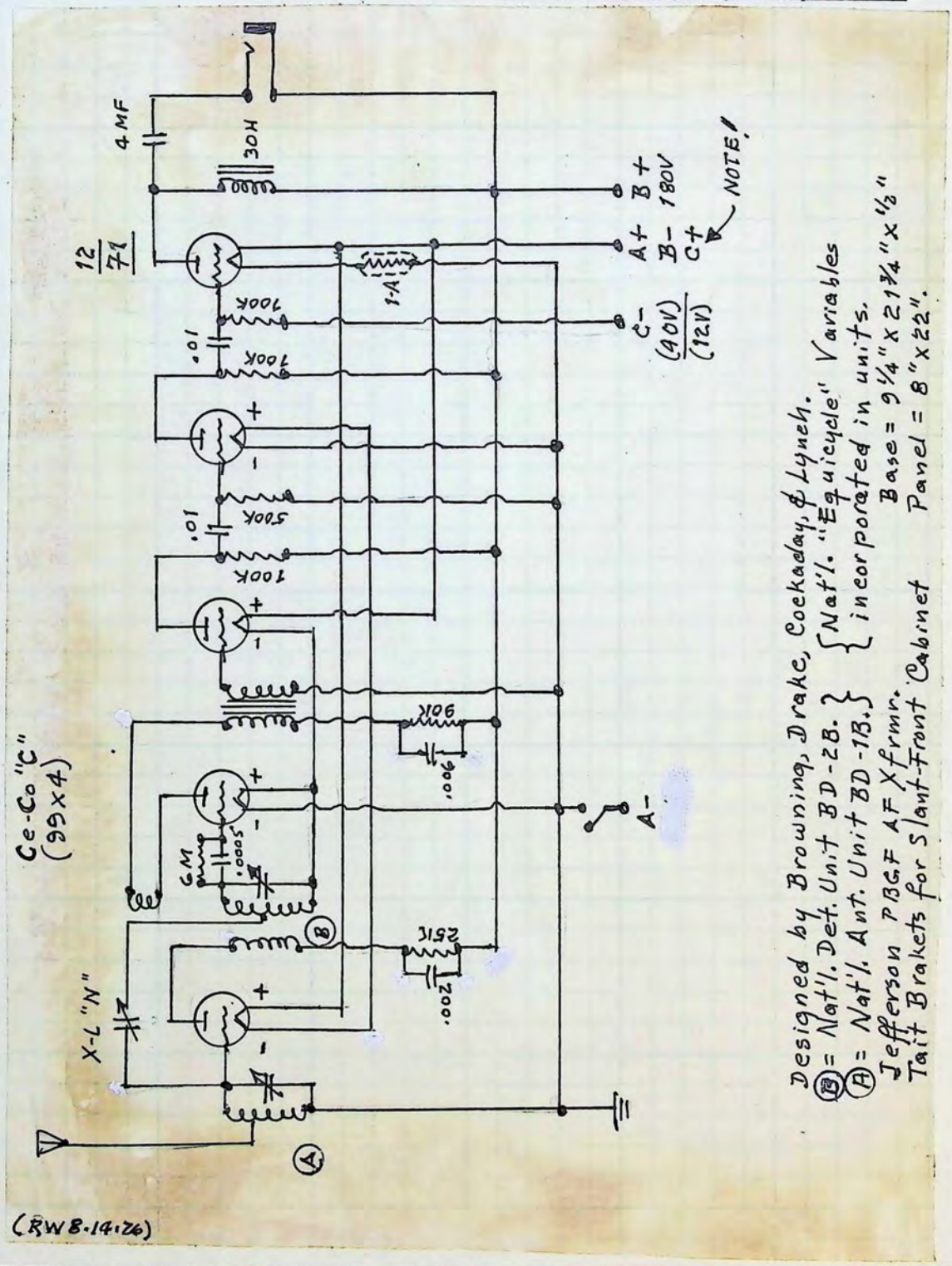
FRONT PANEL DRILL TEMPLATE



Improved Browning-Drake

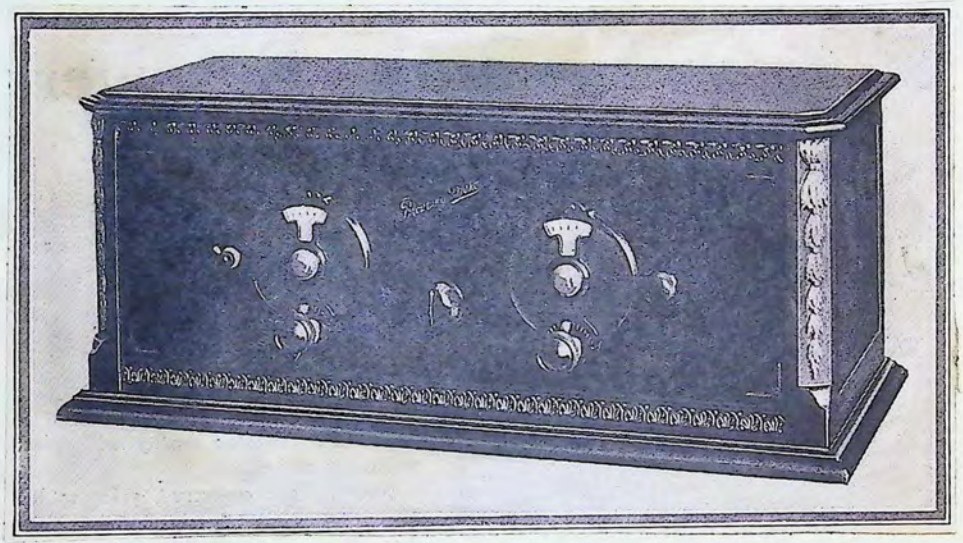
(1926)

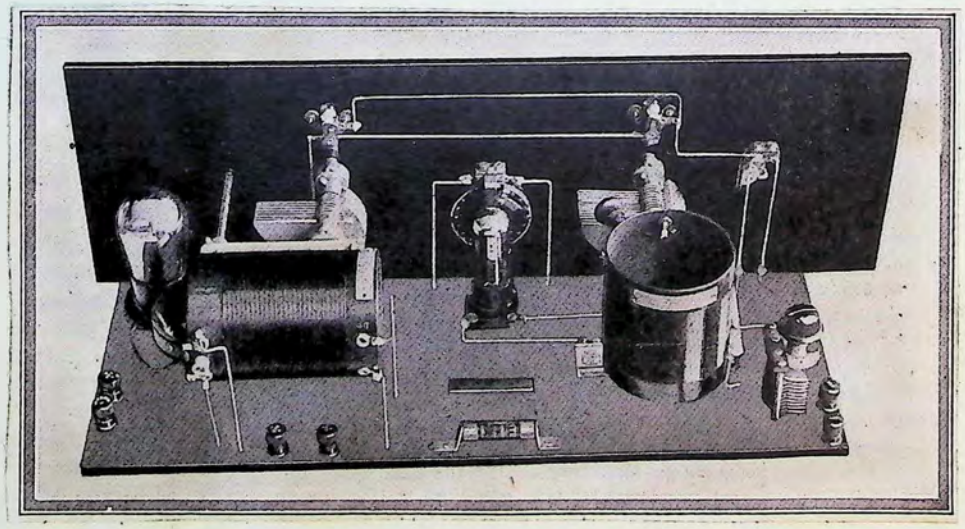
IMPROVED BROWNING-DRAKE, 1926; Sht. 2



Designed by Browning, Drake, Cockaday, & Lynch.
(B) = Nat'l. Det. Unit BD-2B. } Nat'l. "Equicycle" Variables
(A) = Nat'l. Ant. Unit BD-1B. } incorporated in units.
Jefferson PBGF AF Xfrmr. Base = 9¼" x 21¾" x ½"
Tait Brakets for Slant-Front Cabinet Panel = 8" x 22".

2-TUBE BROWNING-DRAKE: 1926





THE KB-8 *BY M. B. Sleeper*

THE KB-8, being tested by the designer and author, M. B. Sleeper.

Of all variants of the original Browning-Drake circuitry probably the most dramatic was the KB-8, designed by Sleeper while he was associated with "Radio Engineering" - one of the two best examples of early Radio media. It was non-regenerative, and incorporated quite a few new units, such as the new National SLF variables, the redesigned B-D coils minus the usual tickler, the new National "Impedaformers" and a new DET tube designed by Harold P. Donle.

Donle had been Chief Engineer for the Connecticut Telephone & Electric Company, and had invented the Sodion tubes as well as designing the Na-Ald "Truphonic" audio amplifier. The new Donle tube used by Sleeper was the most sensitive ever made, unapproached by any other tube available. The electrical characteristics were similar to a similar Donle tube, the D-21 Sodion. It did not require potentiometers and operated without a grid-leak or grid-condenser. The plate had very high impedance, plate current being only 0.1 mA with 22.5V.

THE KB-8 BROWNING-DRAKE: Sht. 2

Another feature of the KB-8 was a new neutralising condenser designed by the Walbert people. This differed from the B-D condenser, called a "Balancing Condenser" by B-D, in that it could be controlled from the front panel, thus obviating hand-capacitance. This is shown as the small knob between and below the two main tuning dials in the panel sketch.

The tickler with its long control arm was always a distinctive feature of the original B-D coils. The new coils by National were an advance, in that they did away with the tickler completely, doing away with another panle control. The employment of resistance--coupling after the detector and before the AF transformers was also new in as much as it had been proved in the RX-1 receiver designed by Radio Emgineering staff, and described in the 17 October, 1925 Radio World.

Even the battery connectors were new, called "Lastite", making for a very neat installation. Unhappily, they also required lugs of a special configuration, and were never popular but Hascom,another innovative manufacturer, did use the "Lastite" connectors on several of their unique units. Also, despite the obvious superiority of Donle DET tube used in the KB-8, it was never exploited, and died aborning.

Binding posts, as indicated were for 22.5, 67.5, 90, and 130 volts. Total current drain, using the tubes specified, was 9.6 mA. C-9V was used on the last AF tube. An interesting set.

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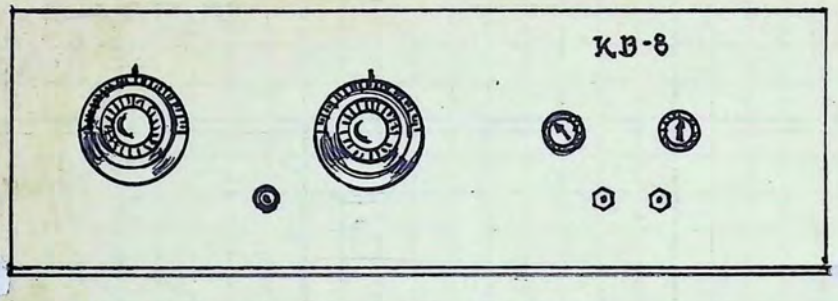
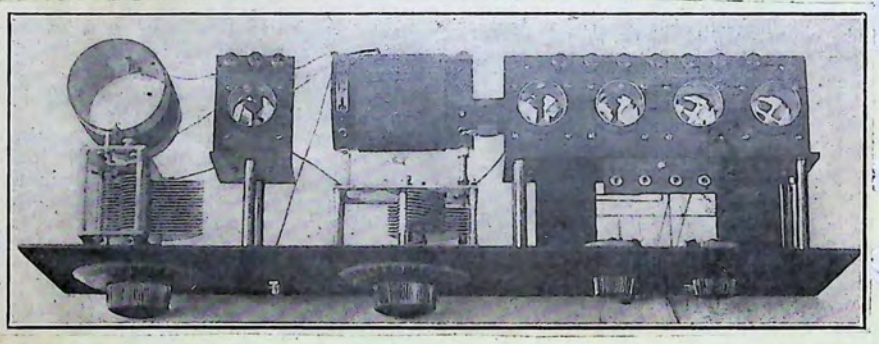
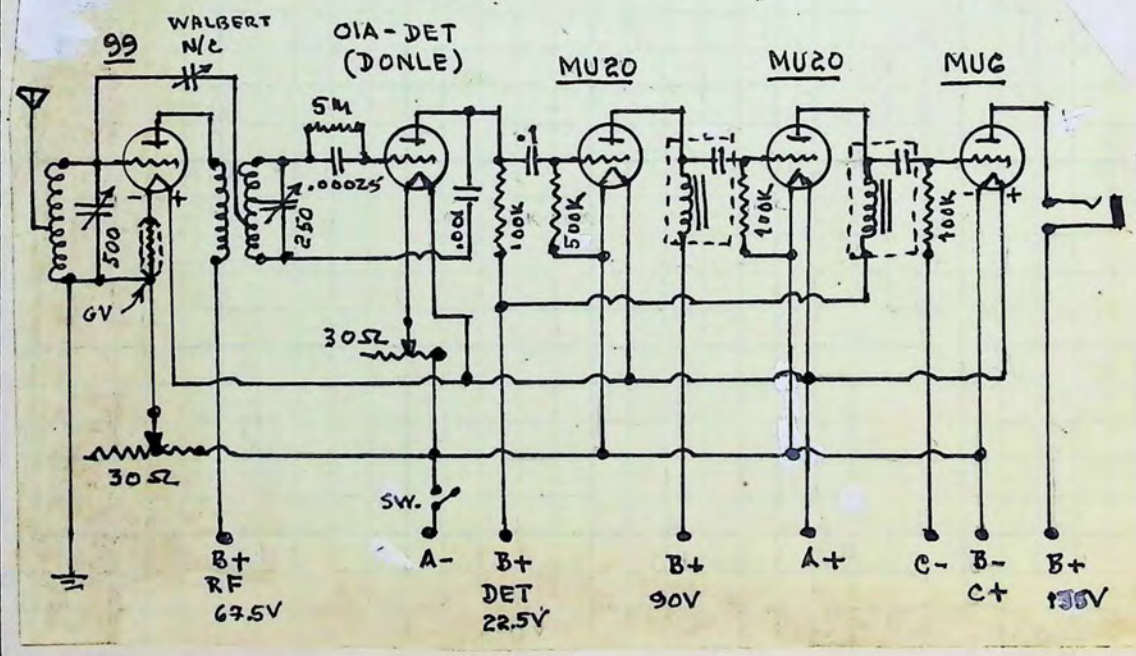
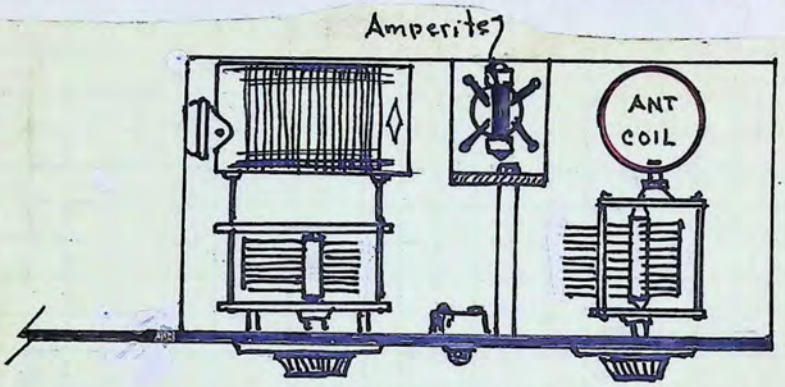
SLEEPER's KB-8 BROWNING-DRAKE, 1926
Sht. 3





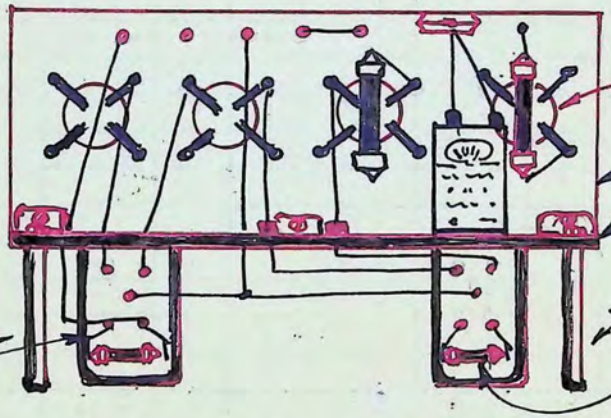


SLEEPER's KB-8 BROWNING-DRAKE, 1926
Sht. 4



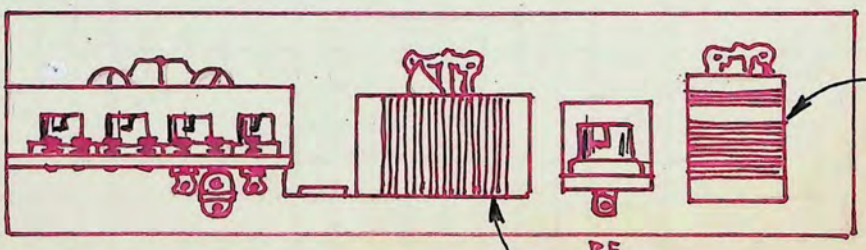
7½" DEEP CABINET REQUIRED.

BOTTOM VIEW RF SEXION
(Amperite Under RF Tube Socket.)



BOTTOM VIEW DET-AF SEXION
(Showing Partial Wiring.)

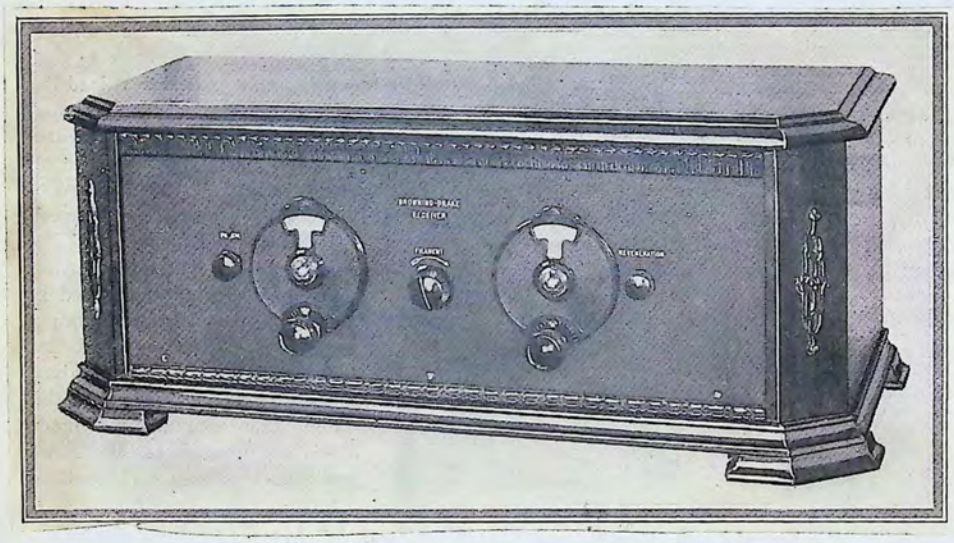
(ACME "B" ELIMINATOR USED ORIGINALLY; SEE Vol. IV.)

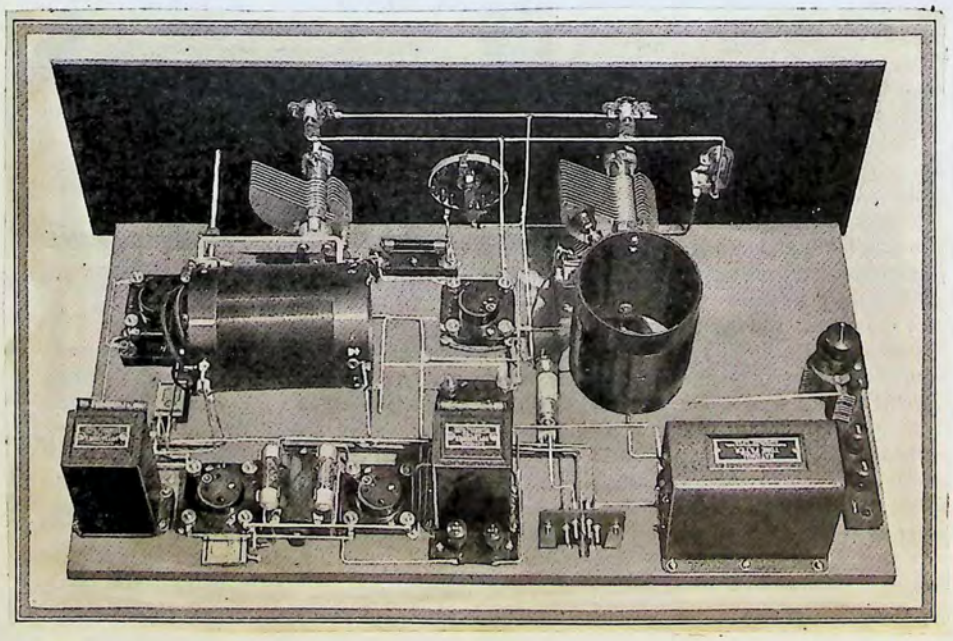


RERE VIEW

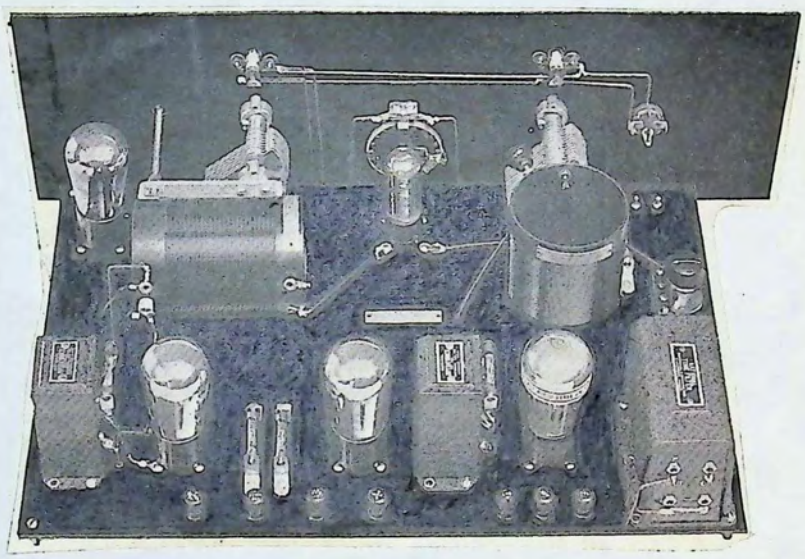
(RW 3·13·26)
(RW 3·20·26)

5-TUBE BROWNING-DRAKE, 1926

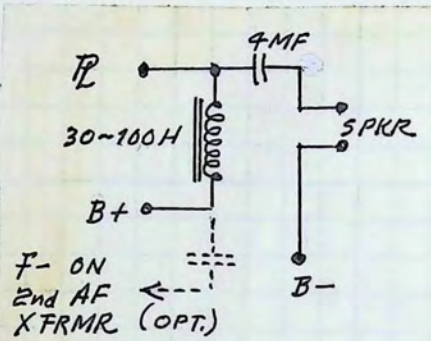




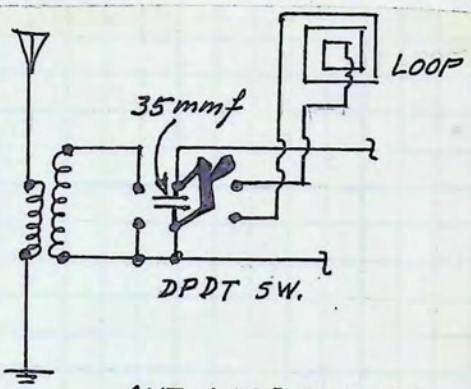
5-TUBE AC BROWNING-DRAKE, 1926



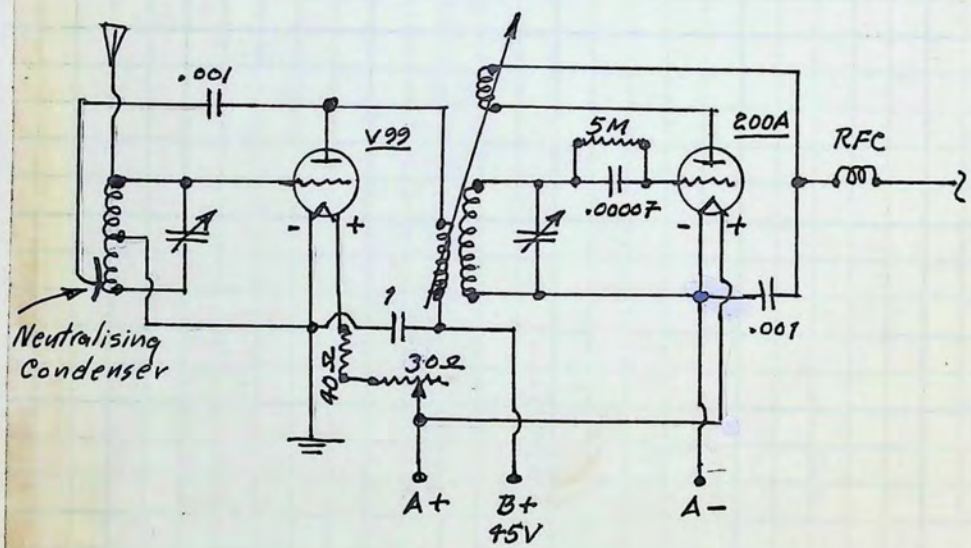
ALTERNATIVE B-D HOOK-UPS



AF OUTPUT FILTER CIRCUIT



ANT~LOOP CHANGE-OVER SWITCH

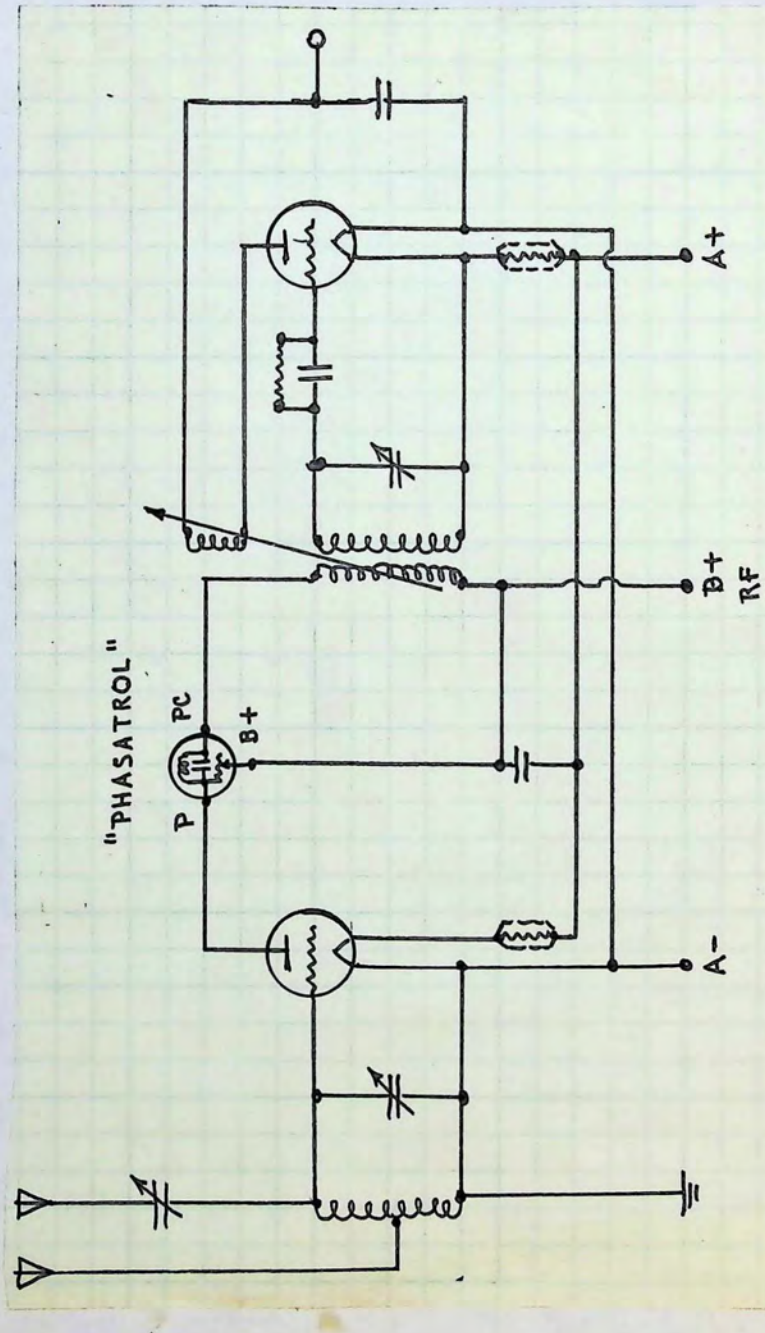


VARIATION

250 mmf Variable = 9 P.
500 mmf Variable = 13 P (LH Side of Panel)

Impedance Amplification Constant 60 to 10K ~.

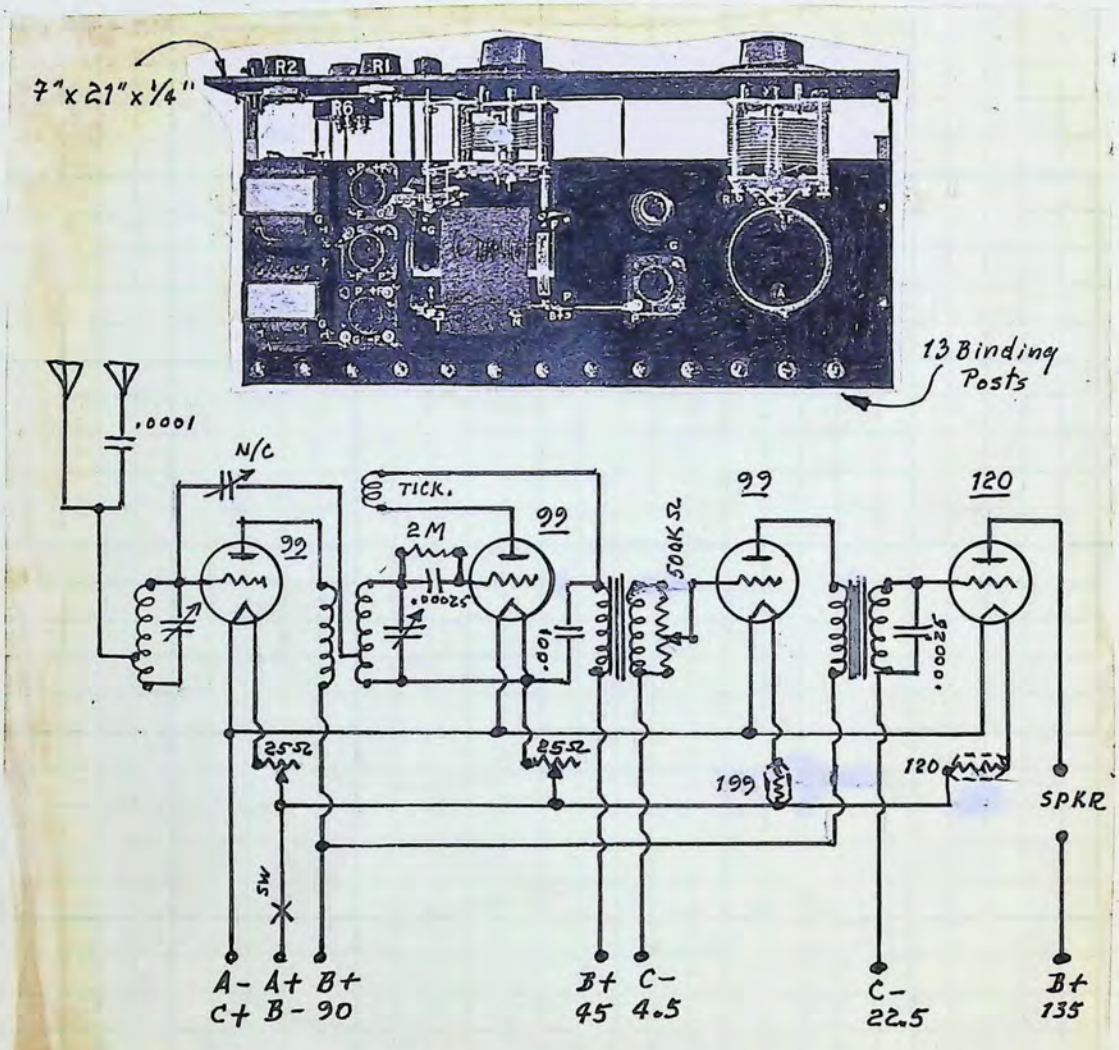
BROWNING-DRAKE WITH "PHASATROL" UNIT



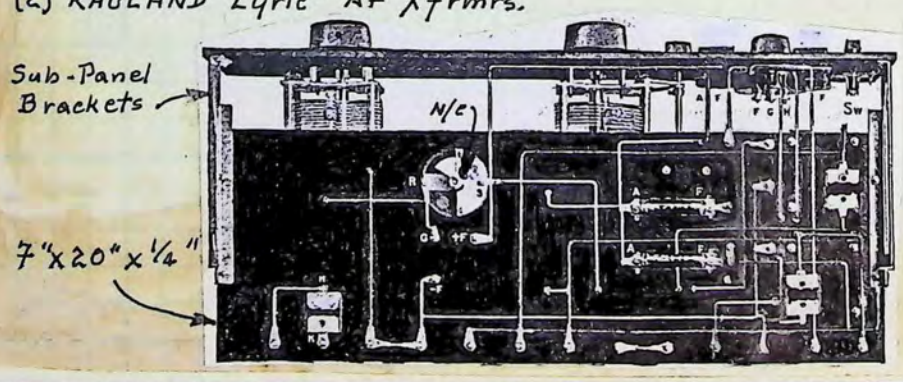
INCORPORATING THE "PHASATROL" INTO ANY B-D CIRCUIT:
ALL OTHER VALUES REMAIN AS SHOWN ON OTHER SCHEMATICS.

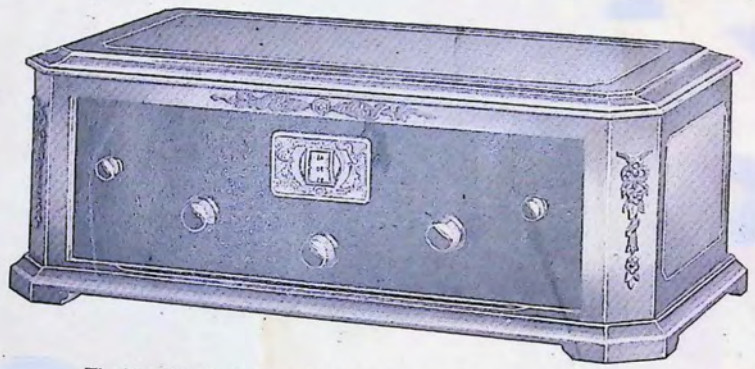
(RN 4/5-27)

"ALL-AMERICAN" VERSION BROWNING-DRAKE 4-TUBE

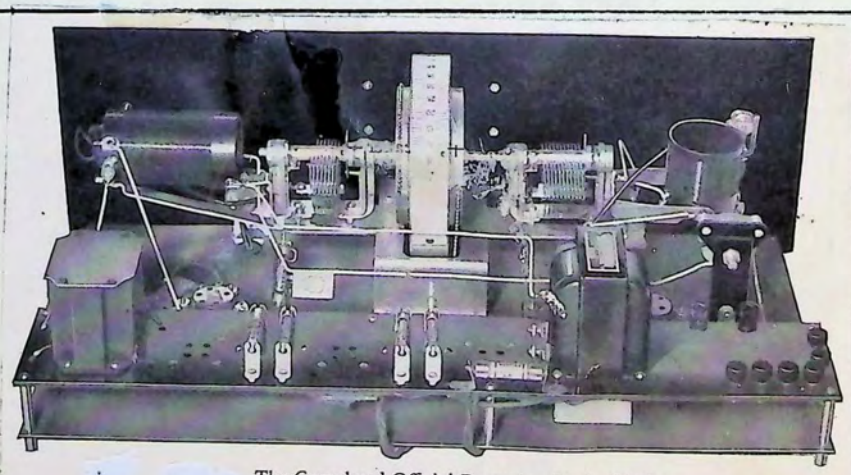


(1) Set NAT'L. "Regena-former" Coils (includes Variables).
(2) RAULAND "Lyric" AF Xfrmrs.



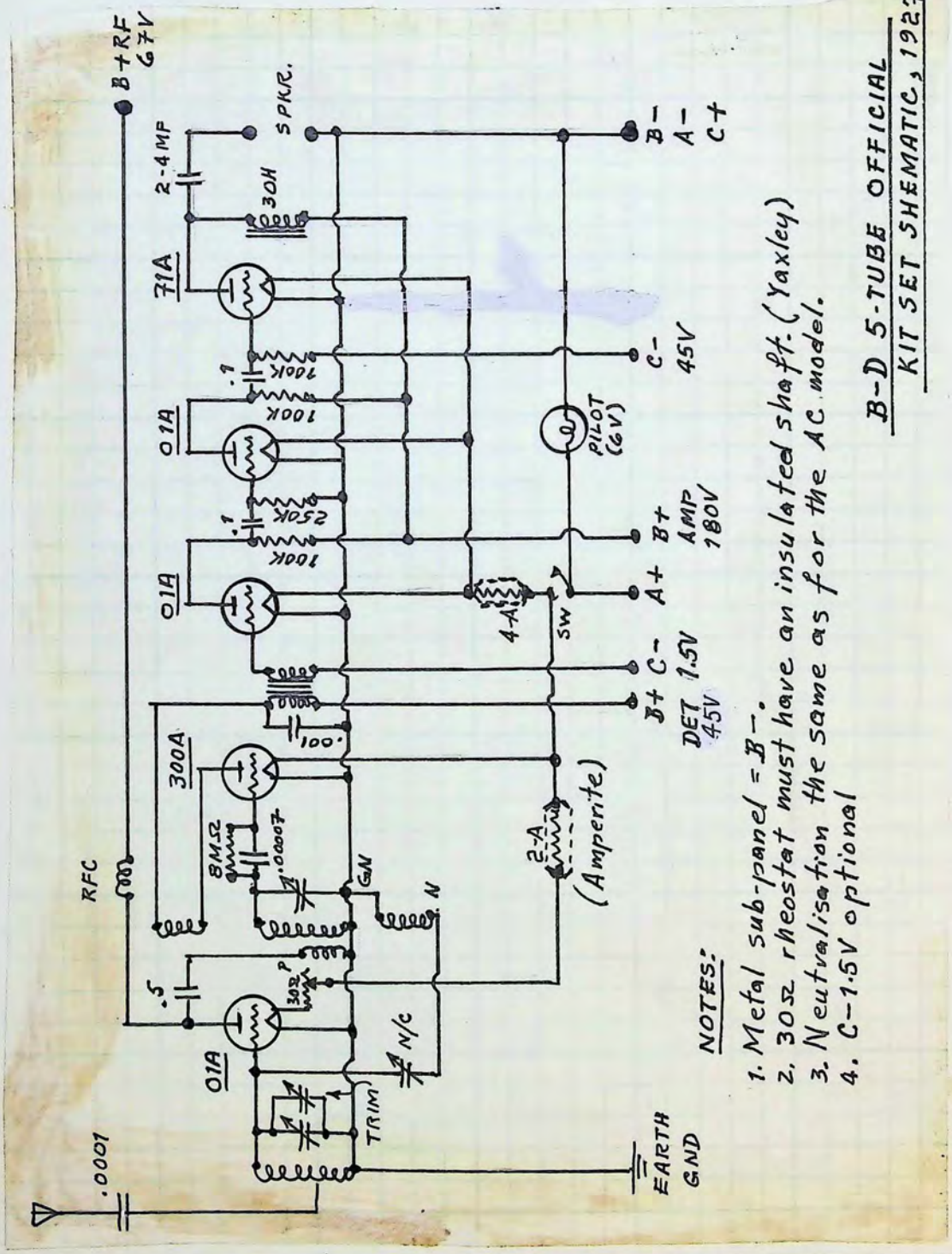


The New Single Control Official Browning-Drake Kit Set in Special Cabinet.

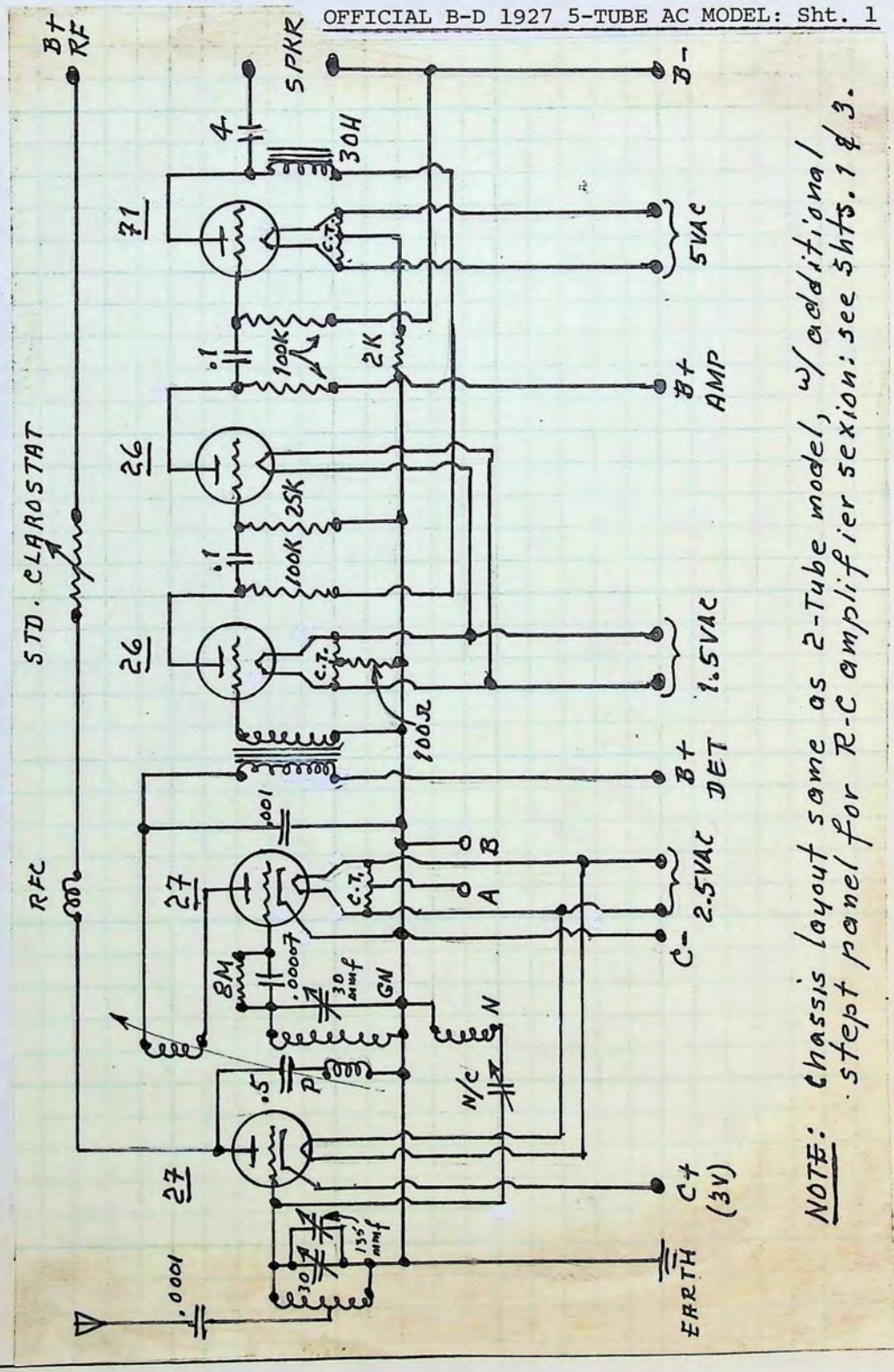


The Completed Official Browning-Drake Kit-Set.

BROWNING-DRAKE 5-TUBE OFFICIAL KIT SET, 1926

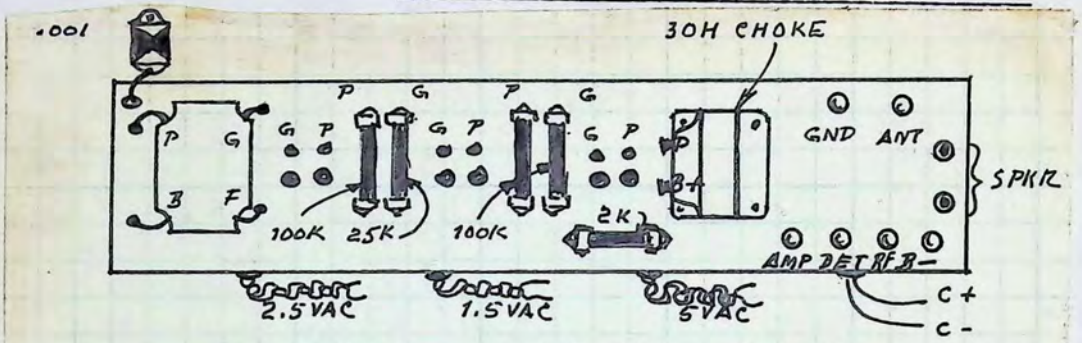


OFFICIAL B-D 1927 5-TUBE AC MODEL: Sht. 1

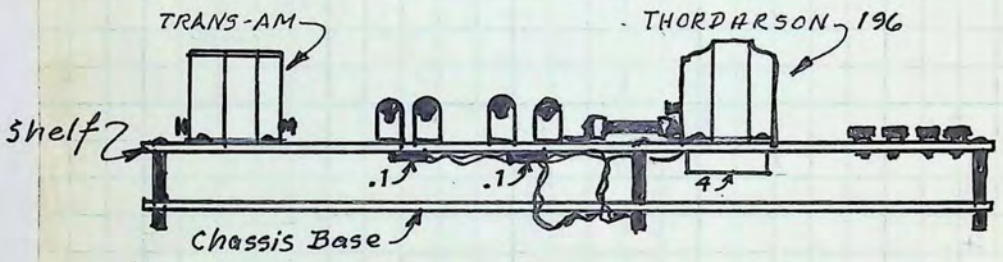


NOTE: Chassis layout same as 2-Tube model, w/ additional/ stept panel for R-C amplifier sexion: see shts. 1 & 3.

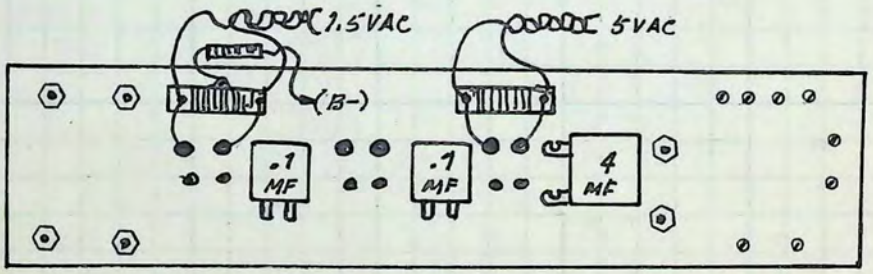
OFFICIAL B-D 1927 5-TUBE AC MODEL; Sht. 2



RESISTANCE-COUPLED AUDIO SHELF



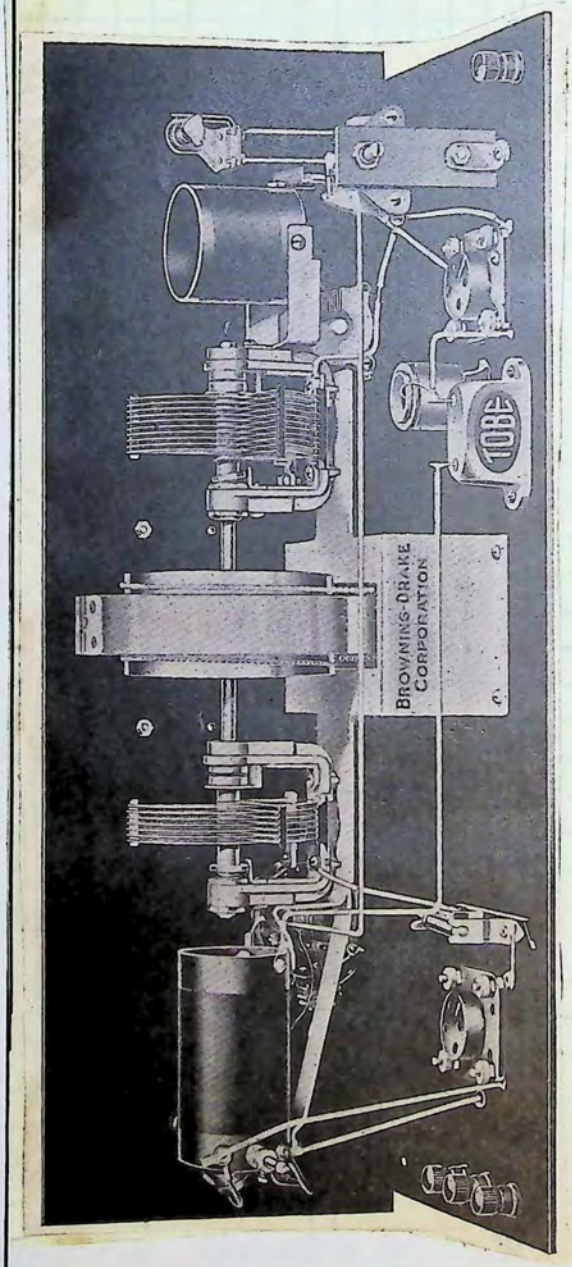
REAR VIEW of R-C SHELF

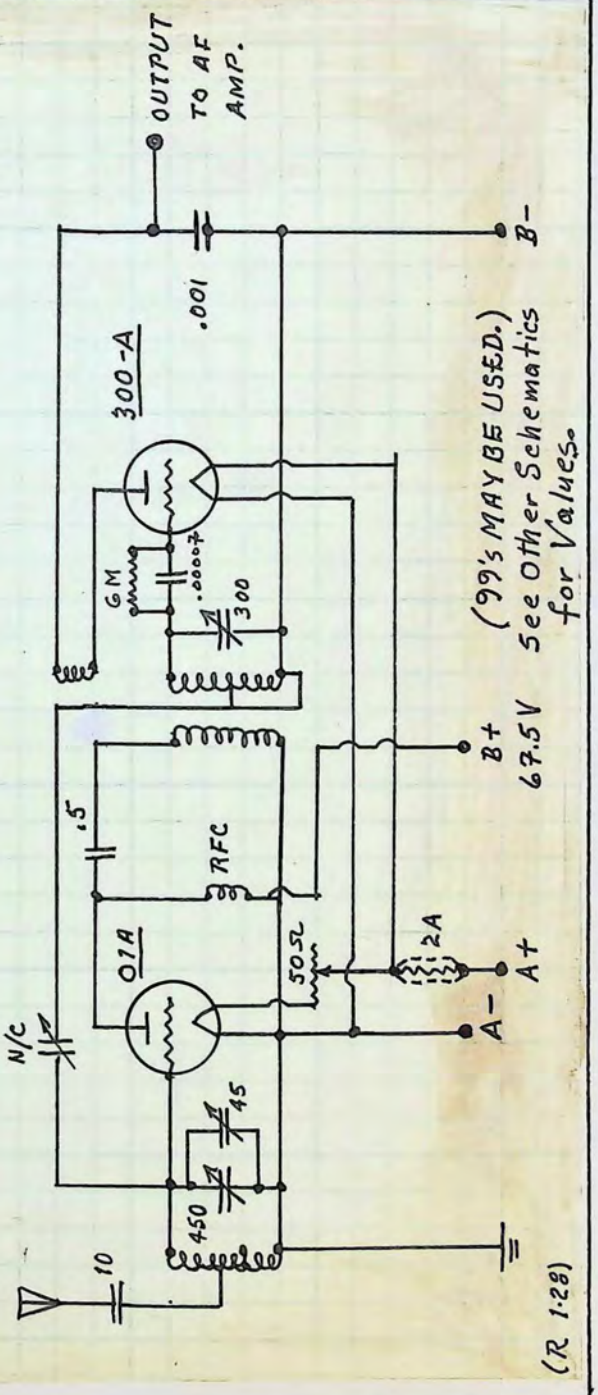


BOTTOM VIEW of SHELF

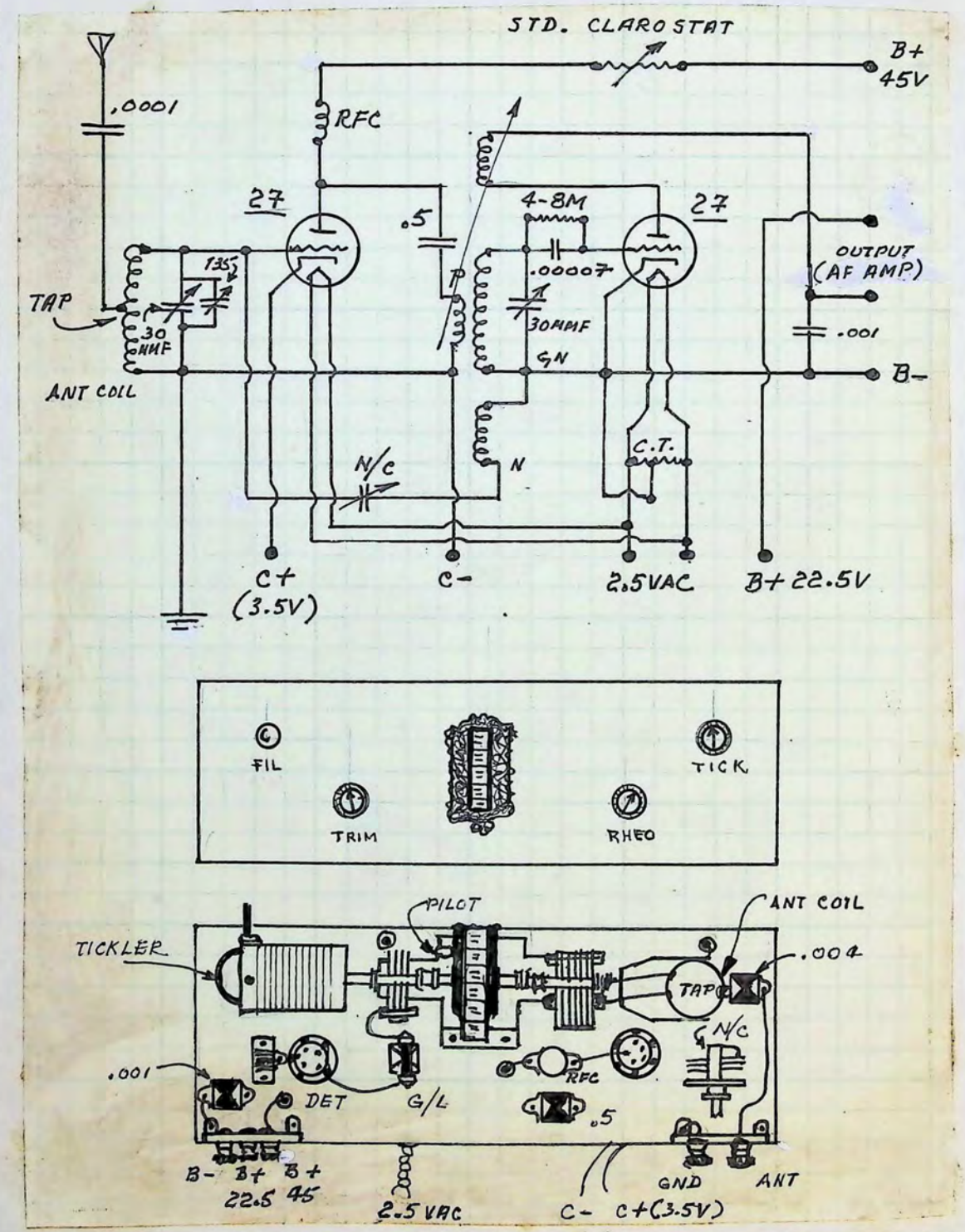
THORDARSON 196 CHOKE.
AMER-TRAN 1st STAGE AF XFRMR.
VARIABLES & N/C = B-D ITEMS.
BENJAMIN 5-Prong Sockets.
YAXLEY SWITCH. RFC = B-D ITEM.
R-C RESISTORS = DURHAM / TOBE.
OFFICIAL B-D Single Drum Control Kit = #26.

2-TUBE BROWNING-DRAKE, 1927

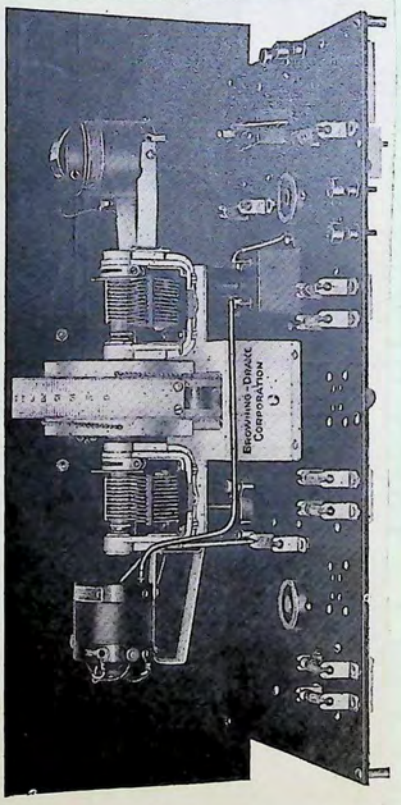


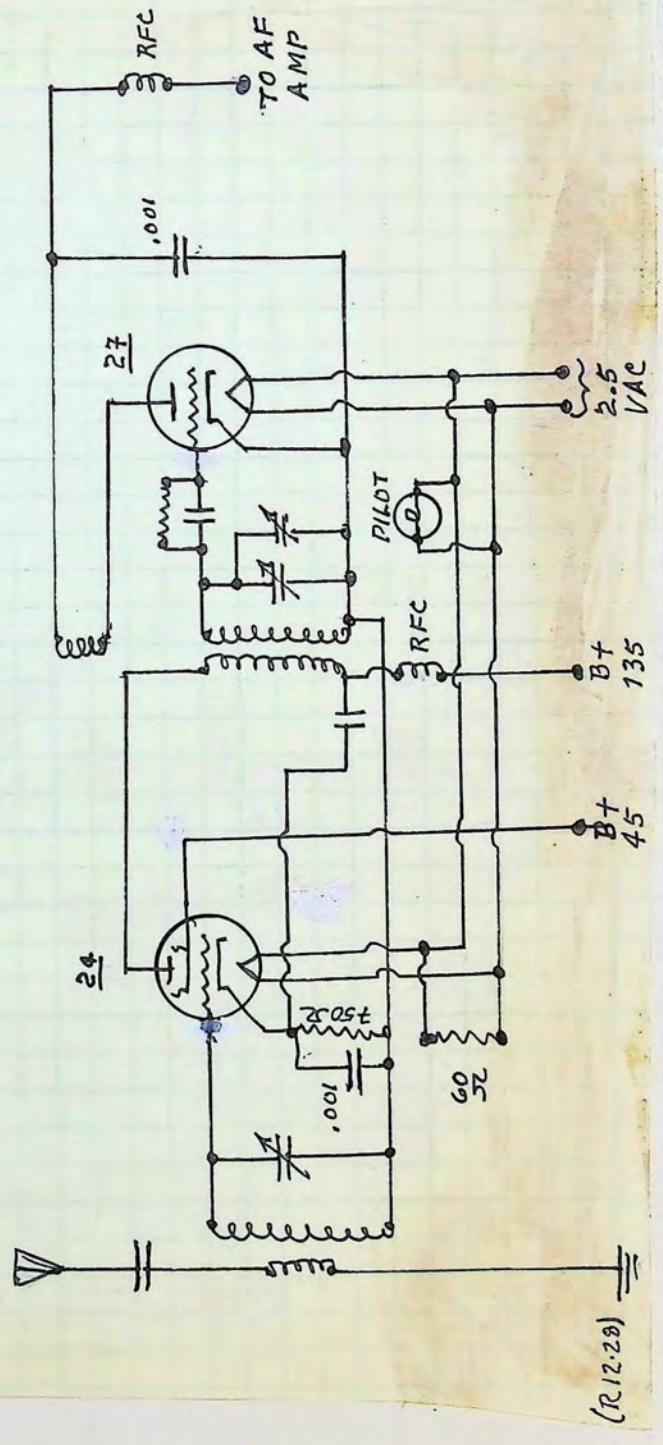


OFFICIAL B-D 2-TUBE AC MODEL TUNER, 1927

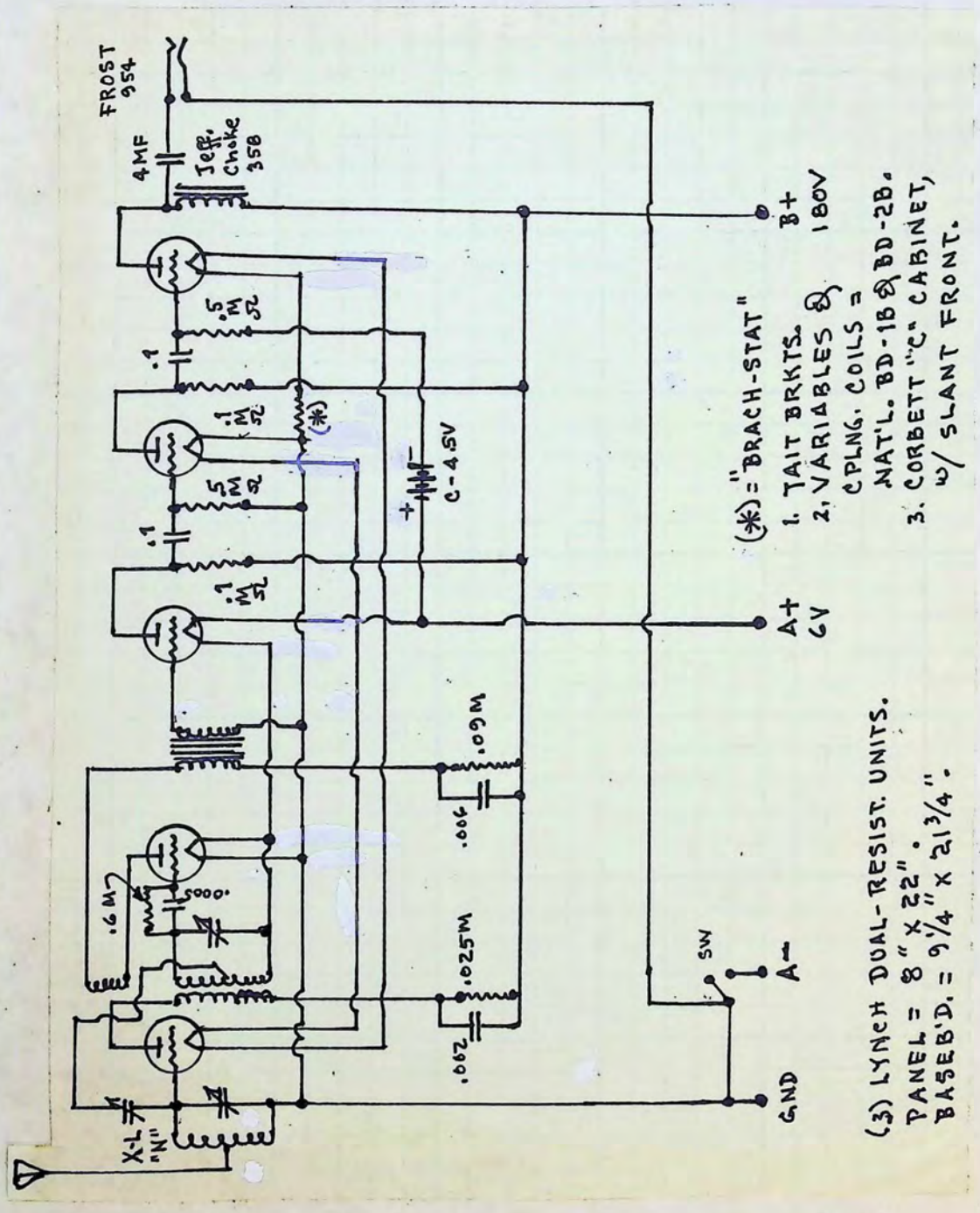


BROWNING-DRAKE AC S.G. RCVR., 1928

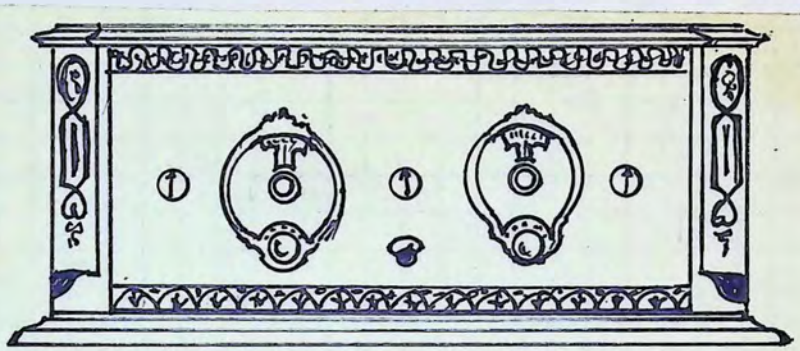


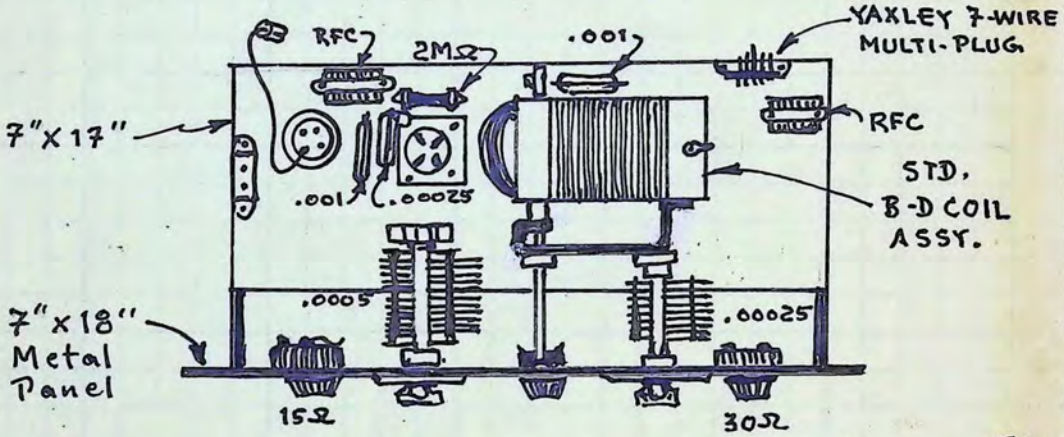


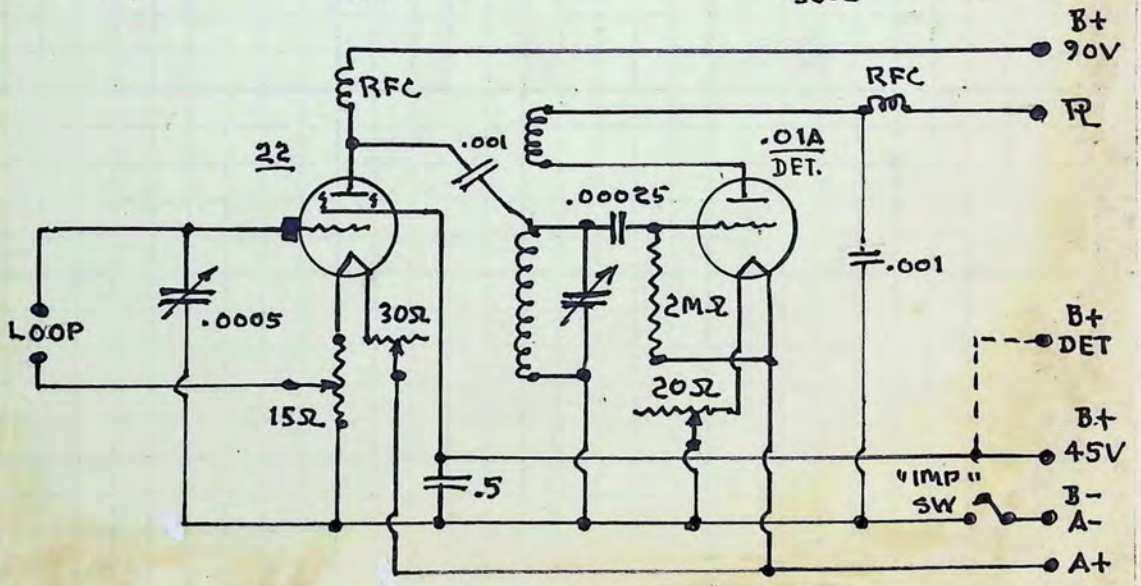
THE JEFFERSON BROWNING-DRAKE, 1927



BROWNING-DRAKE 2-TUBE S.G. TUNER, 1928:Sht.1

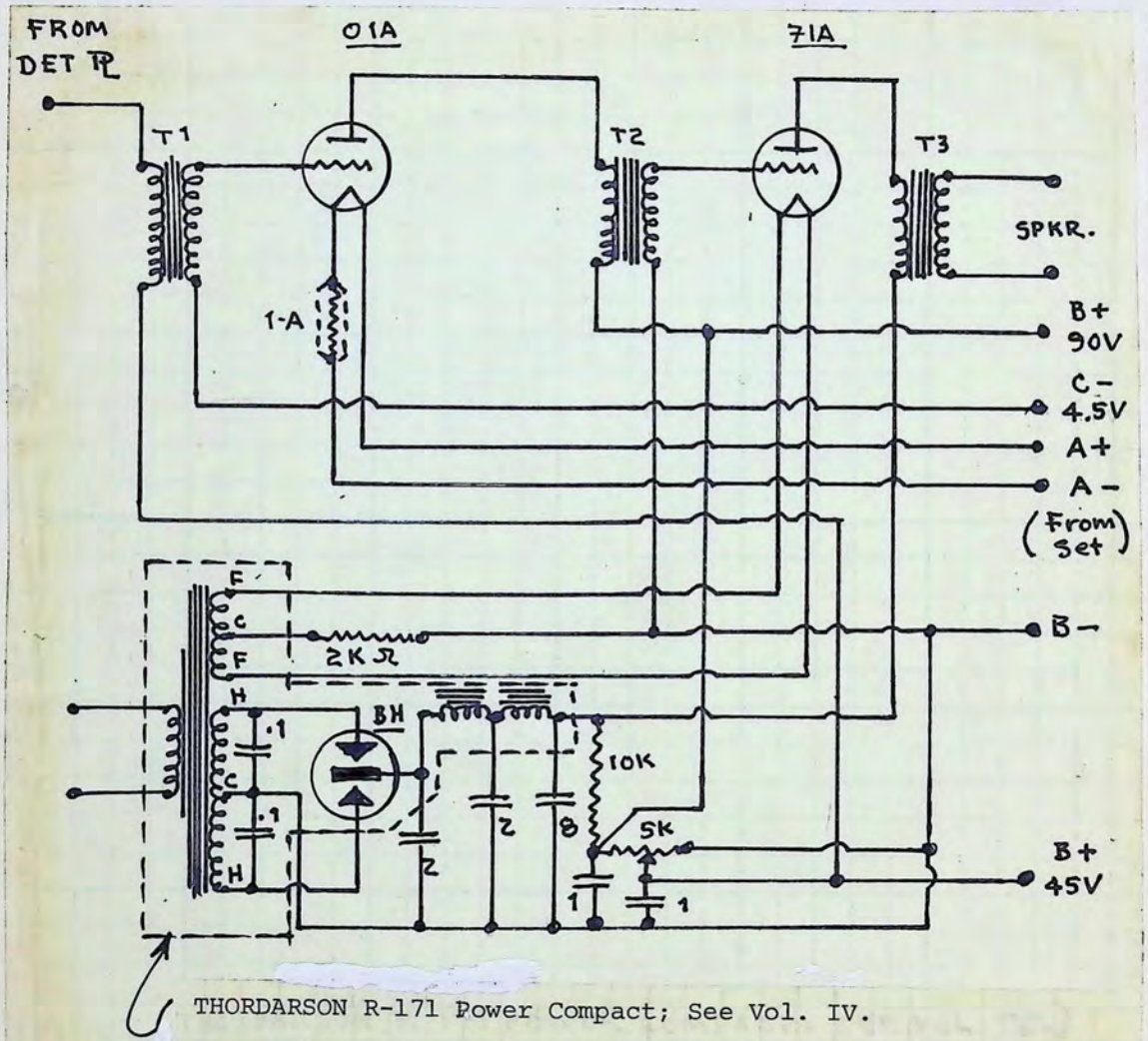






An AF Amplifier is required: see Sht. 2.

BROWNING-DRAKE 2-TUBE TUNER,1928: Sht..2



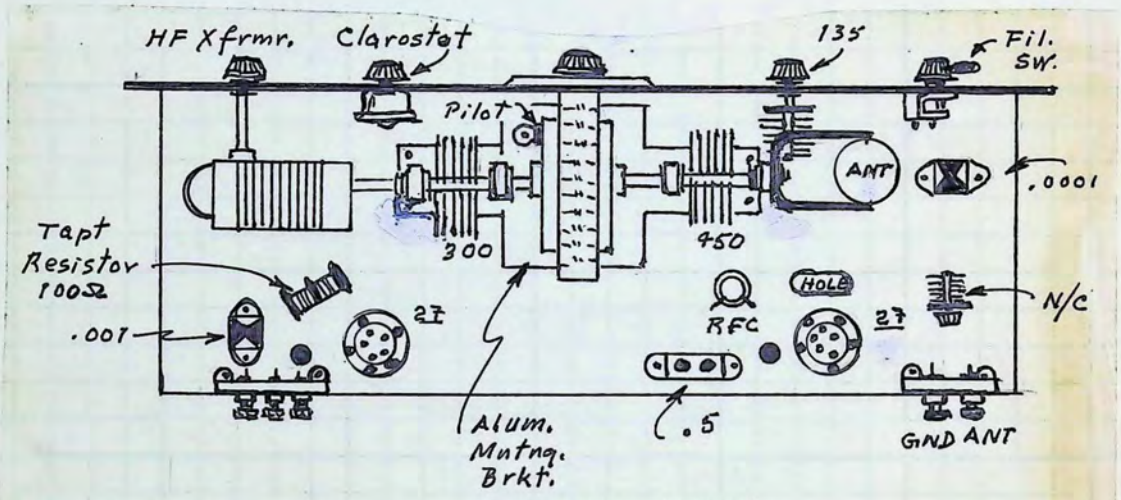
THORDARSON R-171 Power Compact; See Vol. IV.

"AMER-TRAN DeLUXE" Units: T1 = Thordarson 1st Stage AF
T2 = Thordarson 2nd Stage AF
T3 = Thordarson Output Xfrmr.

This was originally a seperate unit,available for most any set. It may be incorporated with receiver by using a larger baseboard. The R-171 unit is quite compact, and requires little room.

CAUTION: DO NOT CONNECT GND (Earth) unless excessive hum occurs.

B-D 2-TUBE RECEIVER, EARLY 1928: Sht. 1



PLAN VIEW

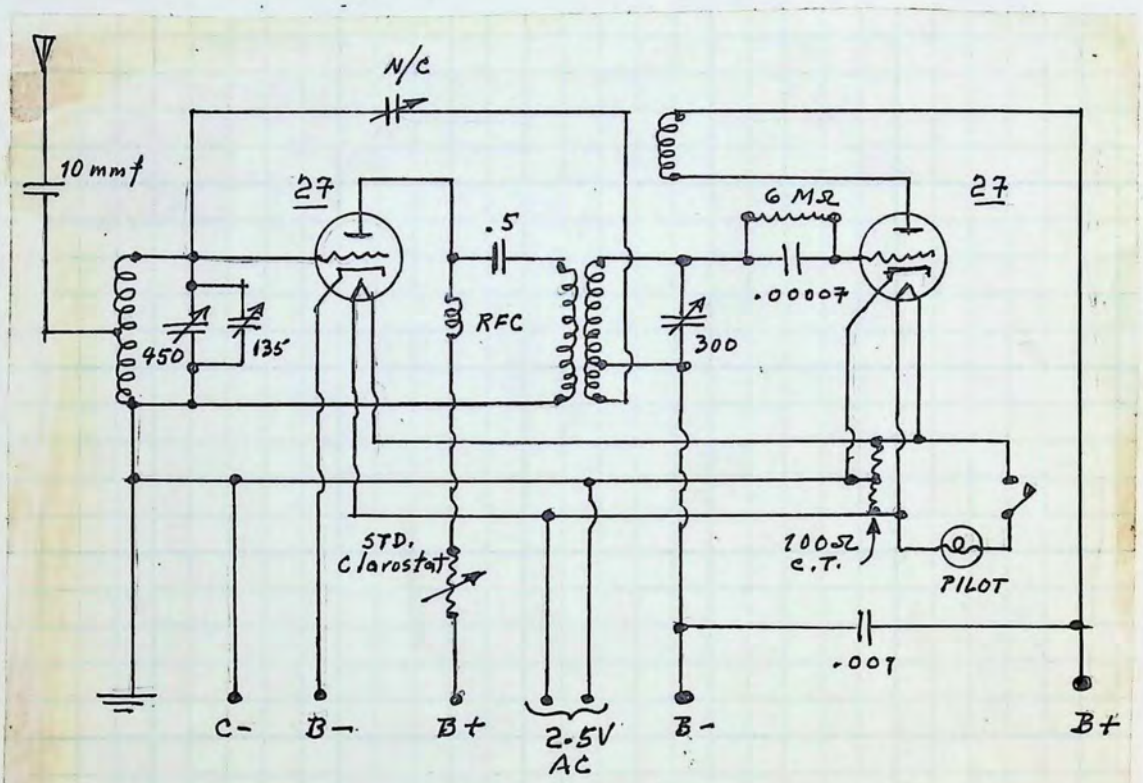
B-D Foundation Kit Consisted Of:

1. ANT Coil. (B-D)
2. RF Coil. (B-D)
3. Hammarlund Variables (300 & 450 mmf).
4. Illuminated Drum-Dial. (B-D)
5. Neutralising Condenser. (B-D)
6. Midget Variable. (B-D) 135 mmf.
7. Built & Engraved Panel.
8. Drilled Aluminum Sub-Panel.

Original Cost = # 55.

(PR 1-28)

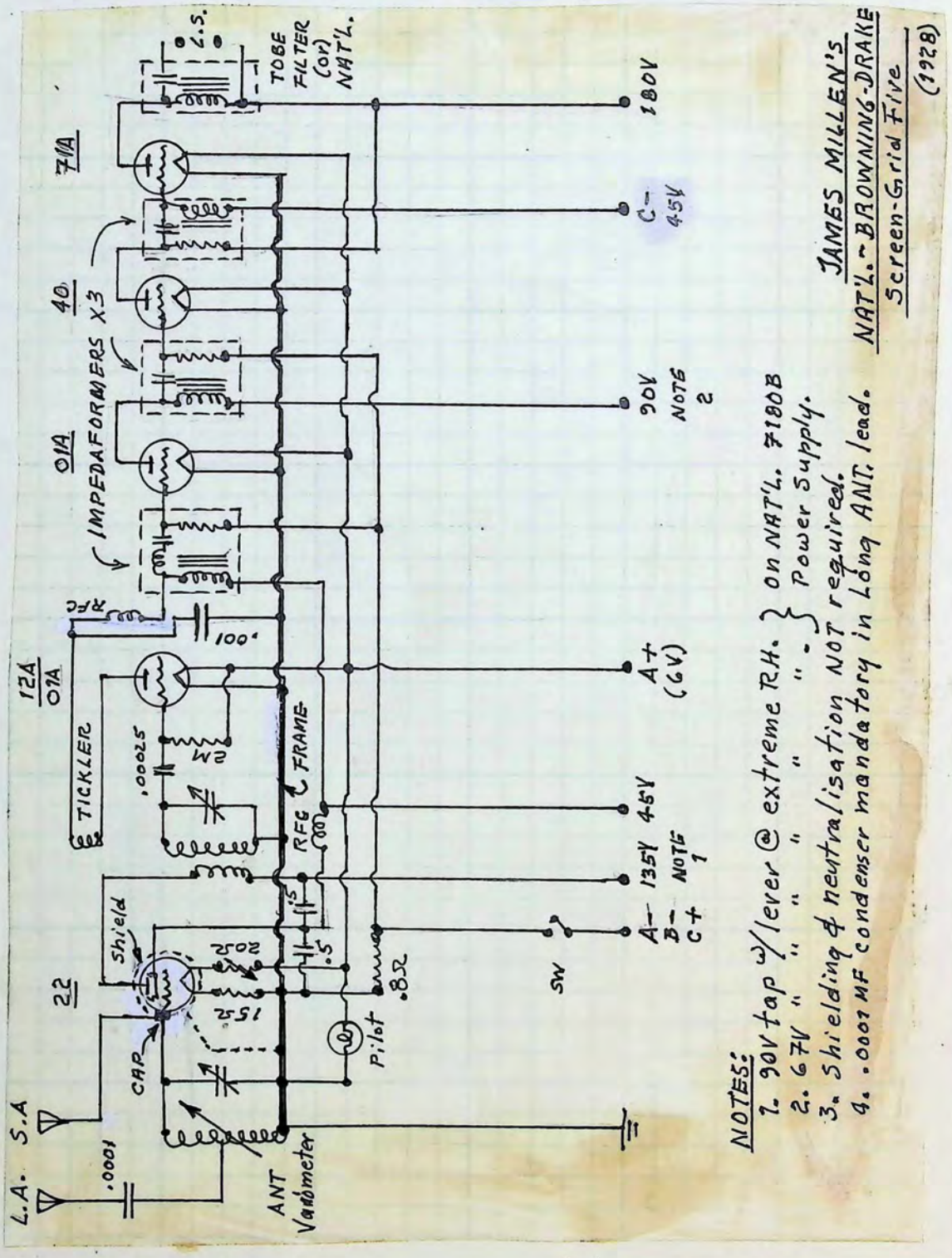
B-D 2-TUBE RECEIVER, EARLY 1928; Sht. 2



Components not specified on Sht. 1 made by such as Yaxley, Eby, Tobe, Aerovox, Benjamin, General Radio. These components can be made-up from similar types in your "junk" box – e.g., binding posts, switch, by-pass condensers, etc.

The AMER-TRAN A-B-C Power Amplifier was used w/ this unit: see Vol. IV of the SKETCH-BOOKS.

(Sht. 1) MILLEN's NATIONAL-BROWNING-DRAKE S.G. 5, 1928



(Sht. 2) MILLEN's NATIONAL-BROWNING-DRAKE 5, 1928

PARTS LIST

1. NAT'L. Single Dial Tuning Unit #B-D-222, w/#28 illuminator (Pilot).
2. " Impedaformers (3).
3. " Tone Filter (or TOBE).
4. " RFC (2).
5. GENERAL RADIO Sockets (5).
6. AEROVOX Mica Condensers: .001, .0001, .00025.
7. LYNCH 2MΩ Grid-Leak w/Mounting.
8. " 15Ω FIL "Equalizor" w/Mntng.
9. " #4-5 " " " " .
10. YAXLEY Switch.
11. TOBE .5MF By-Pass (2).
12. CARTER 25Ω Rheostat.
13. Micarta Panel 7"x18"
14. " Sub-Panel 10"x17"

NOTES:

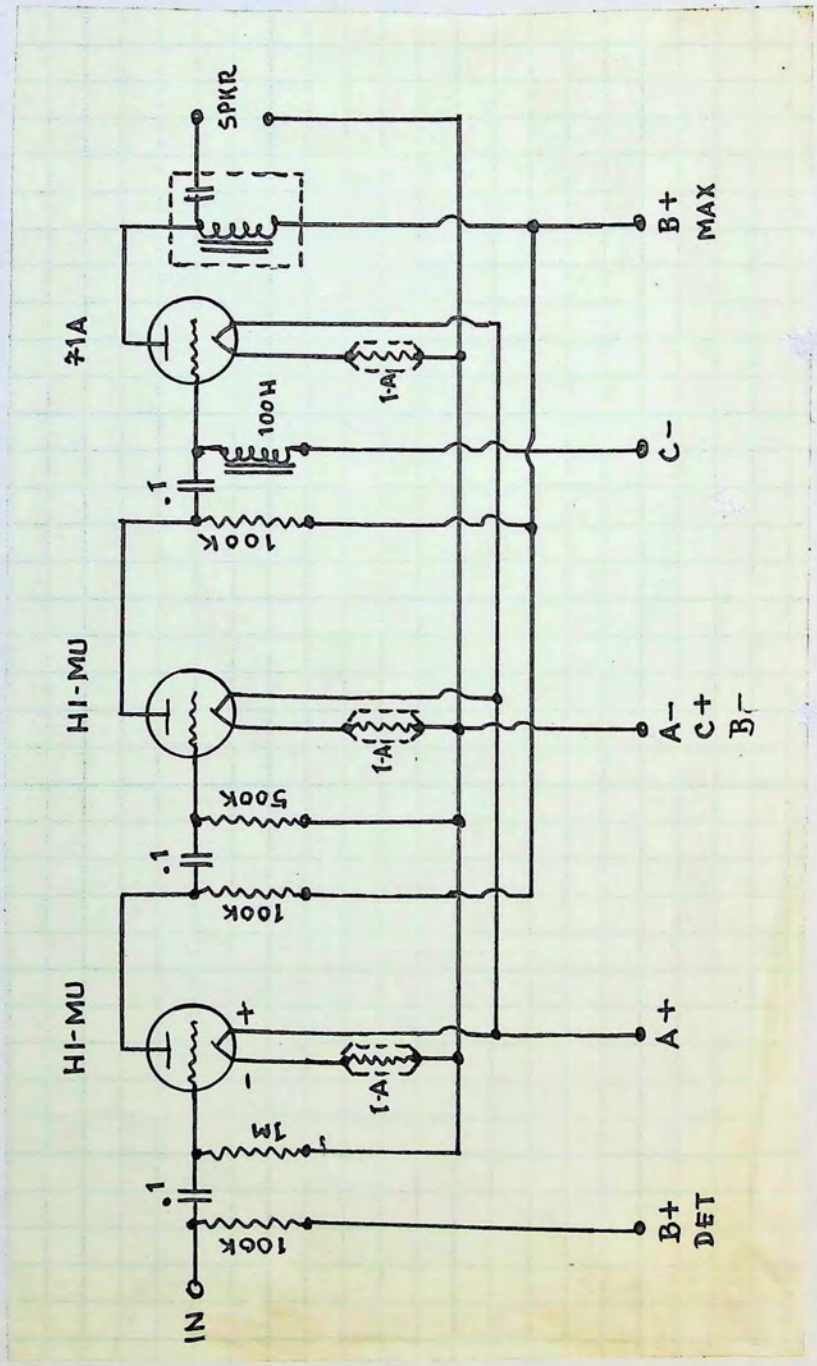
Lead from 22 TP should be run under the sub-panel, in as straight a line as possible, to the PRI of the RF Xfrmr.

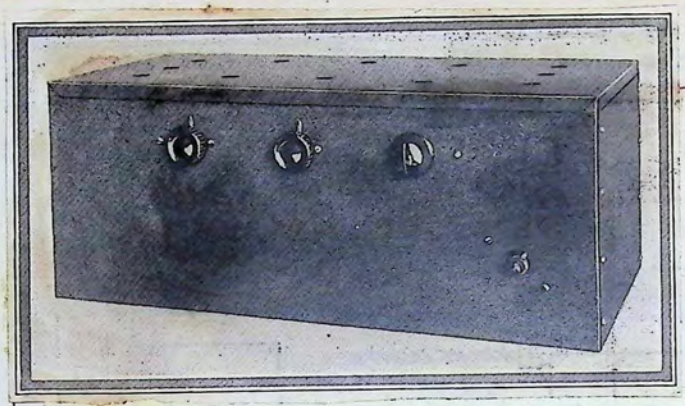
Frame (steel) is @ GND potential, & should be connected @ convenient points as shown. Placing a soldering lug under a screw-head is recommended.

Lead from S.A. to 22 grid-cap should be flexible, rubber-covered, small gauge.

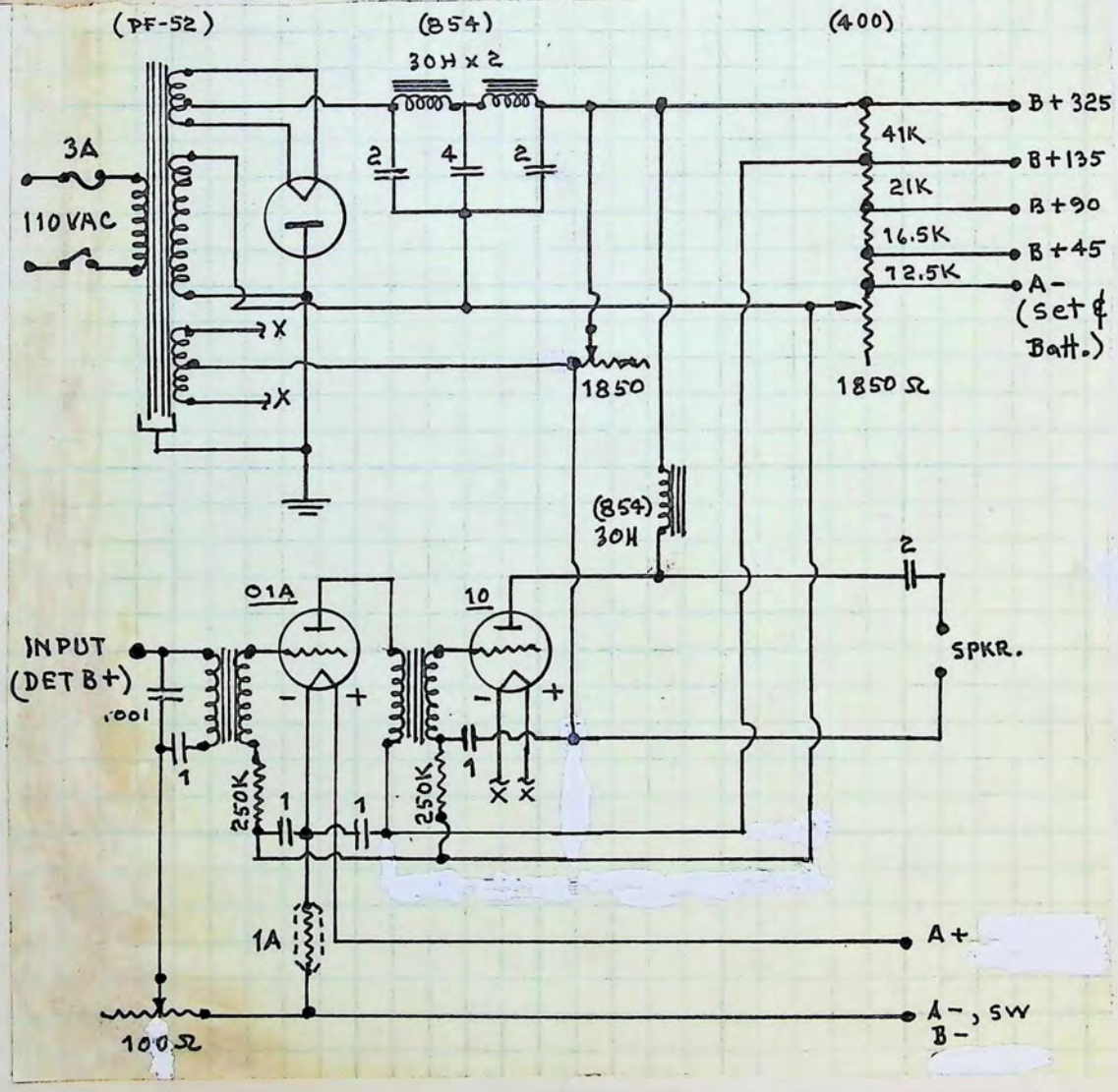
A short ANT is preferred - 6' to 20'.

BROWNING-DRAKE R-C AMPLIFIER



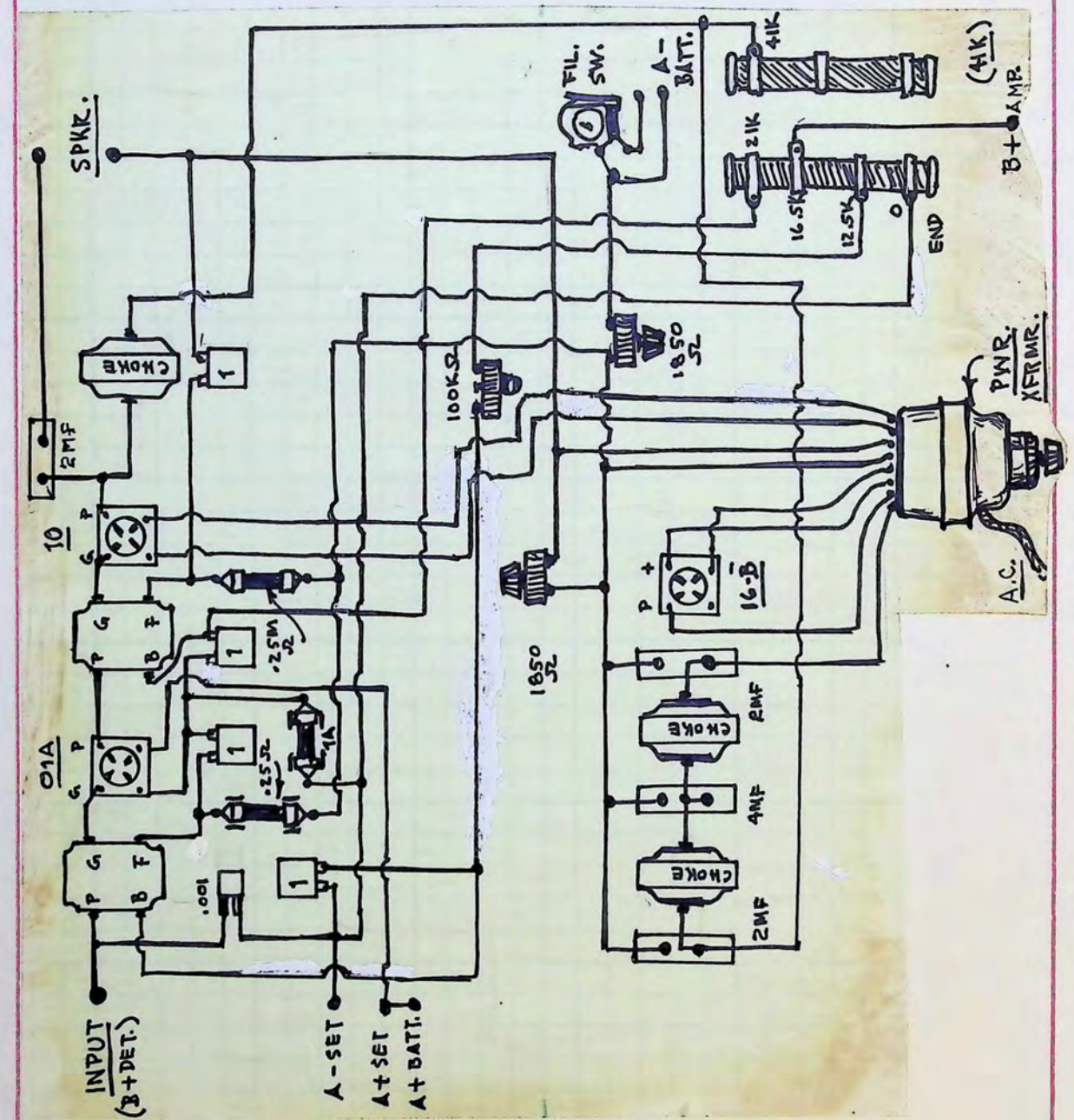


BROWNING-DRAKE POWER AMPLIFIER
(1927) (Sht. 1)



AmerTran AF transformers; nos. are Amertran numbers.
Tobe Filter Condenser Block.
Signal 21" cabinet used originally.

BROWNING-DRAKE POWER AMPLIFIER
(Sht.2)



TROUBLE - SHOOTING

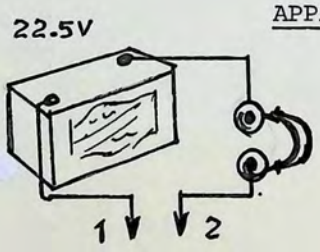
1. NO OSCILLATION WITH TICKLER ROTATING:
    1. Poor DET tube.
    2. Insufficient DET voltage.
    3. Tickler connexions in error.
    4. Grid-condenser shorted.
    5. .001 MF by-pass in DET Plate omitted.

2. POOR QUALITY OF RECEPTION:
    1. Incorrect C-biasing.
    2. Open winding in AF xfrmr. or choke.
    3. Defective amplifier resistors.
    4. .1 MF blocking condenser leaking.
    5. DET oscillating from improper balancing.

3. LACK OF DX RECEPTION:
    1. Set in poor location.
    2. Poor ANT/GND system.
    3. Open PRI circuit in RF xfrmr.
    4. Inferior RF tube.

4. POOR SELECTIVITY:
    1. No oscillation with tickler rotated.
    2. ANT too long.
    3. Poor GND connexion.
    4. Poor soldered joints in coils.
    5. Dust on variable plates.

5. SET IS NOISEY:
    1. Disconnect ANT and GND; if noise persists, check the B-batteries.
    2. Defective resistances.
    3. .1 MF blocking condenser leaking.
    4. Loose connexions.



Test Apparatus

APPARATUS TESTS

All components being tested must be entirely disconnected from circuit.

TESTING AF TRANSFORMERS:
Connect phones across SEC and touch PRI terminals with a 1.5 to 6V battery. If a click is heard, xfrmr is good.

TESTING AF CHOKE:

Touch terminals 1 and 2 to choke terminals. A click signifies a good choke; louder when disconnected.

TESTING THE BLOCKING CONDENSER:

1. Charge condenser by touching connexions from a 22.5V battery to the terminals.
2. Remove battery leads and let condenser stand for 30 seconds.
3. Touch phone tips to condenser.
4. A click should be heard; if not,replace.

TESTING FIXED & VARIABLE CONDENSERS:

1. Connect Point 1 to one terminal of condenser.
2. Tap Point 2 to other terminal.
3. A slight click should be heard, but subsequent tapping should produce no clicks.

TESTING COILS:

An open circuit can usually be detected visually. Connect Points 1 and 2 to ends of coil. A click should result. NOTE: this is simply a continuity check and a modern meter is simpler and quicker.

TESTING THE TICKLER:

1. Connect Points 1 and 2 to the two ticker lugs.
2. A click should be heard.
3. If all connexions are good, no click should be heard when tickler is rotated.

AC TUBE NOTE

When AC tubes are being employed, heater leads should be carefully twisted to reduce AC hum. This also applies to a pilot lamp and switch.

If an AC hum occurs after receiver has been neutralised, check the following connexions carefully:

1. Ends of the C.T. resistors to FIL contacts.
2. Pilot lamp wires.
3. C-bias connexions in RF sexion.
4. C-bias connexions in AF sexion.
5. Try different AC tubes; some hum more than others.

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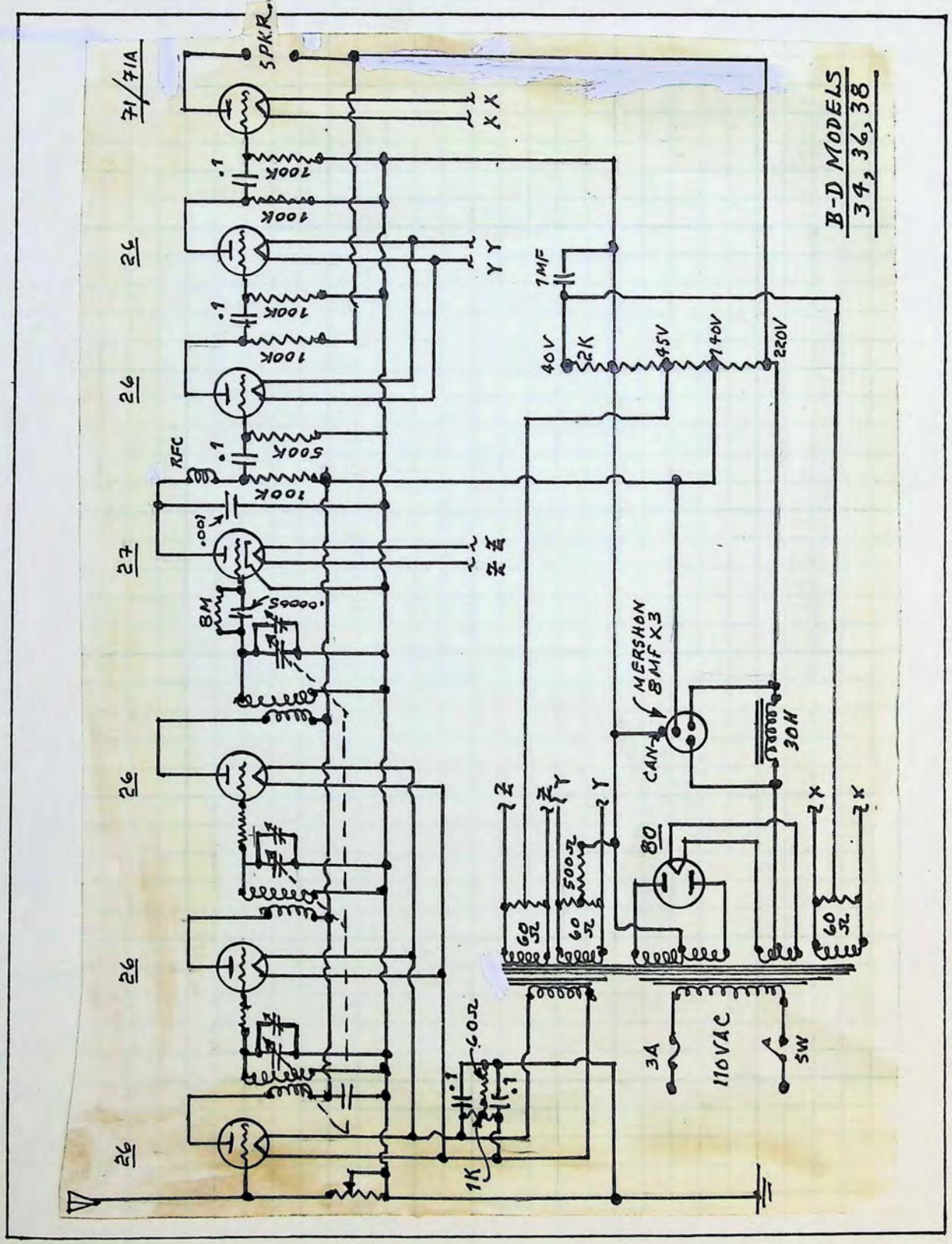
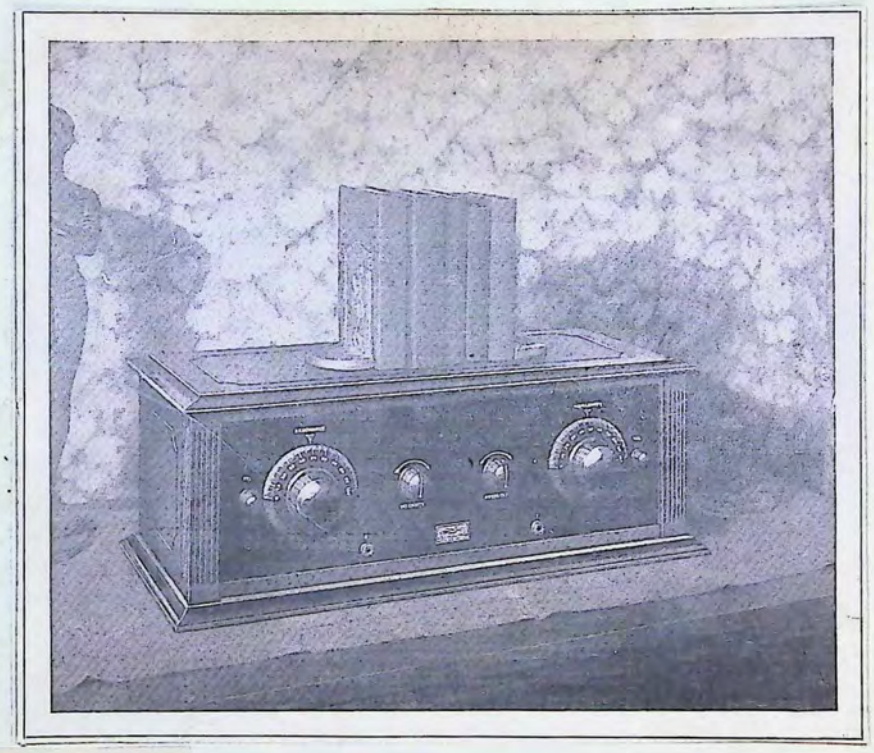
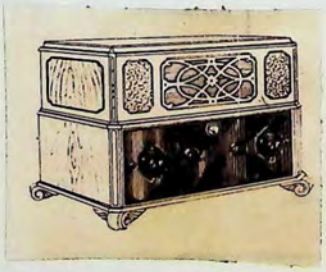

B-D MODELS
34, 36, 38
71/71A
SPK.R.
26
27
RFC
.001
.1
100K
500K
1MF
40V
2K
45V
140V
220V
XX
YY
ZZ
8M
.00005
MERSHON
8MFX3
CAN
30H
80
60Ω
500Ω
3A
110VAC
SW
1K
.05



THE B-D JUNIOR

5 tubes with new type sockets; power tube may be used; mahogany finish cabinet. List price, without tubes and batteries, $95.

Anouncing
the
BROWNING-DRAKE RECEIVER



THE B-D SENIOR

6 tubes with new type sockets; built-in-loud-speaker; battery compartments. List price, without tubes or batteries, $185.

THE B-D STANDARD

5 tubes with standard sockets; provides for power tube; mahogany cabinet with battery compartments at either end. List price, without tubes and batteries, $130.

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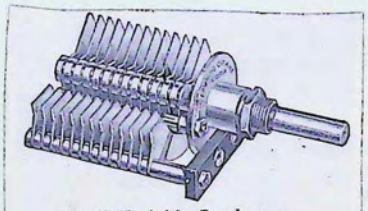
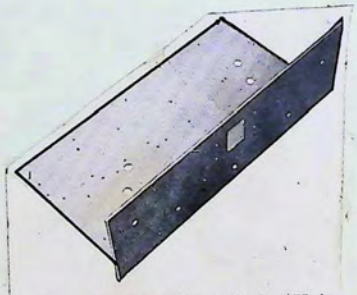


Small Variable Condensers



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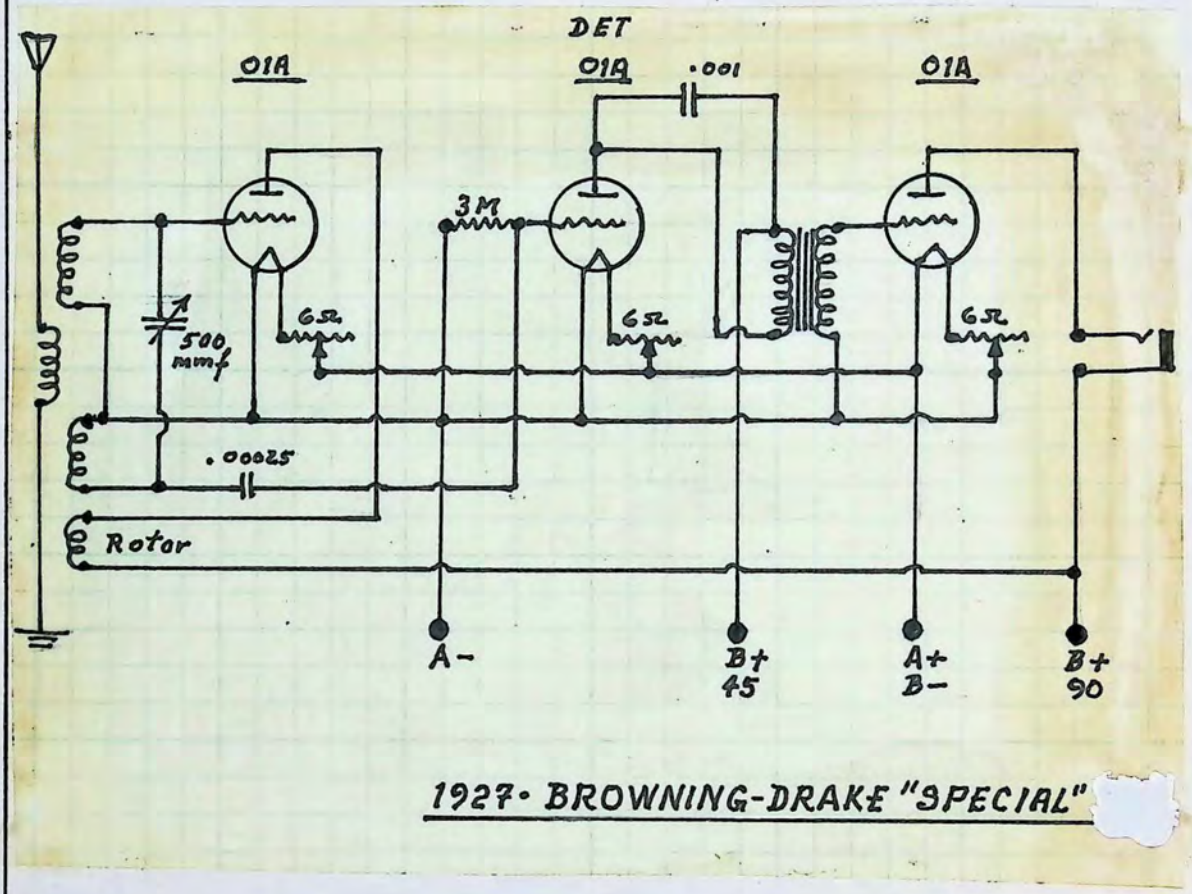

1927· BROWNING-DRAKE "SPECIAL"

In reviewing the various Browning-Drake circuitry, you have undoubtedly noted that in terms of true originality or uniqueness, the B-D circuits, regardless of whose design, were not exceptional. What distinguished the B-D circuitry from other conventional circuits of the time was the unique Browning-Drake coils. Because of this, you find these coils appearing in a variety of early circuits by others, dutifully reported by the media. This may or may not have led to the eventual release of "Official Browning-Drake Kits", after Browning and Drake decided to incorporate themselves into a conventional radio production unit.

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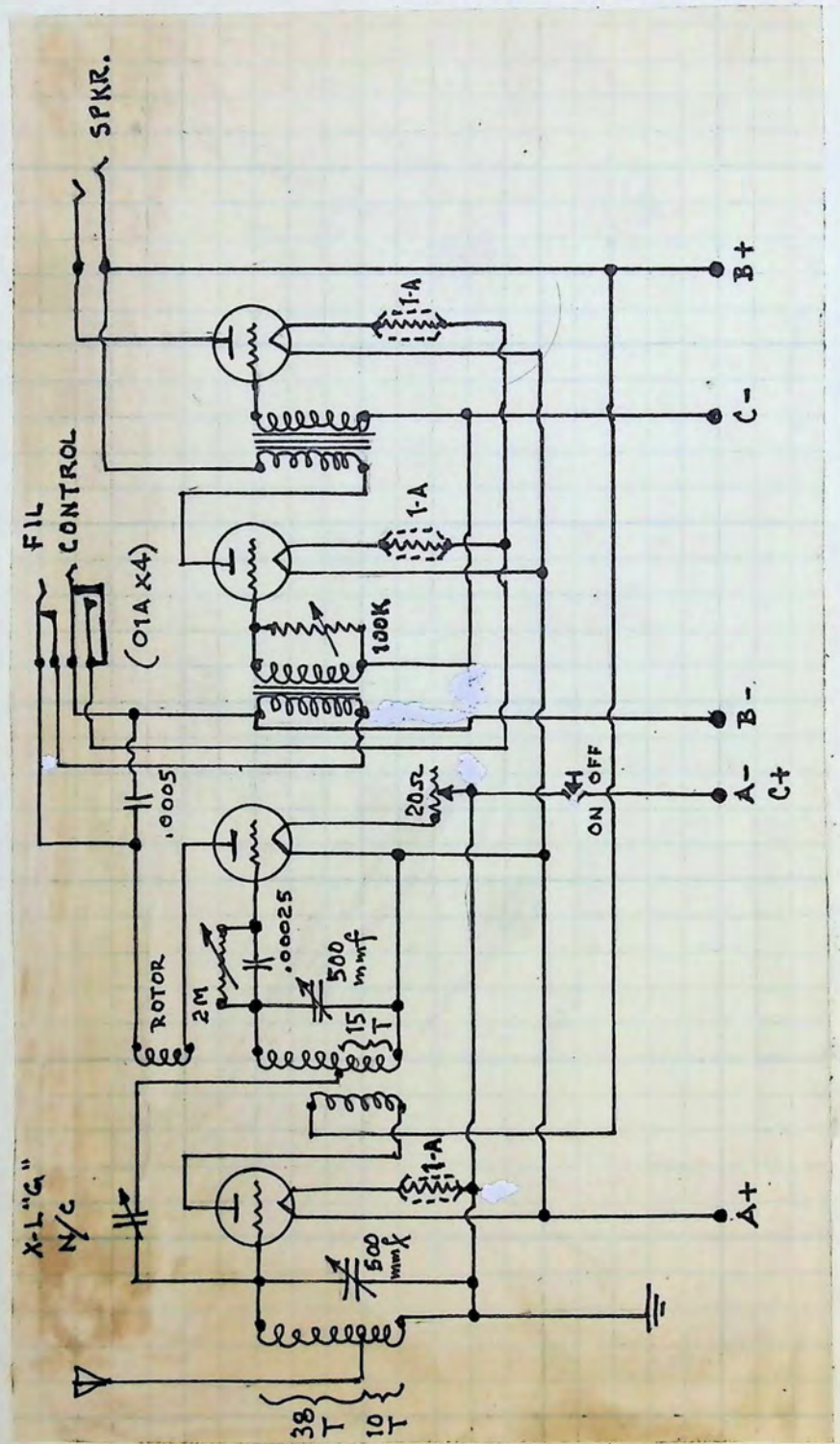
ANOTHER CONVENTIONAL BROWNING-DRAKE, 1926



Values are the same as other Browning-Drake circuits.

(1001 RQA)

Beyond Rider!

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